Inde[illegible]ntents, September 1943

(The [illegible]o Contents appears at the back of the December issue each year.)

Airports and Aviation
Airways to Peace ... 76
Nonsense About the City of Tomorrow ... 113

Buildings, Public
Burbank's New City Hall ... 55
Community, School Facilities Integrated ... 75

Civilian Defense
Aid for CD Workers Injured on Duty ... 62
Rochester's City-County Fire System ... 91

City Manager Plan
City Manager Appointments ... 109

Planning and Zoning
What Happens in Unzoned Areas ... 76
Weather, Climate, and City Planning ... 107
Zoning and Planning Notes ... 121
(*See Also Post-War Planning*)

Population
New Plan for London ... 68
Population Shifts—Wartime and After ... 83
More than 2,500 Negroes Live in Each of These Cities ... 101

Post-War Planning
Post-War Work in Cities ... 7

[illegible]
[illegible]
City Health Dept. Aids Slum Clearance ... 59
Zoning and Planning Notes ... 121
Municipal Law Notes and Decisions ... 123

Lighting, Outdoor
A.P.I.C. Throws a Wrench at Modern Luminaires ... 117

Manpower
Balancing Wartime Manpower Needs ... 5
How the WMC Classifies Cities ... 93

Memorials
Janesville's Shrine of Honor ... 97

Motor Equipment
New Crash Truck ... 17

Officials and Employees
Late Once in 32 Years ... 7
Vitamin Pills for Municipal Employees ... 15
Aid for CD Workers Injured on Duty ... 62
Women Who Serve Their Cities ... 64, 109
North Dakota Engineer License Law ... 67
Part-Time War Work by City Employees ... 79
Municipal Salaries and Living Costs ... 107

New England Association to Discuss War and Post-War ... 9
Post-War Plans for Sanitation Field ... 13
New Treatment Plant, Englewood, N. J. ... 13
Tacoma Looks Forward ... 53
New Plan for London ... 68
Local Government Is News ... 70
Airways to Peace ... 76
42 More Small Municipalities Report on Post-War Planning ... 87
More Cities Get Power to Build Cash Reserves ... 89, 125
Governor Urges Housing Developments ... 109
Nonsense About the City of Tomorrow ... 113
Tomorrow's Housing and Planning Job ... 122

ower Plants
Kilowatts for Crawfordsville ... 66

riorities
Priority-Less Repairs ... 13

ublic Relations
Local Government Is News ... 70

ublications
New Books and Pamphlets ... 127

urchasing
Separate Equipment Bids Explained by Engineer ... 7

uotable Thoughts
For Your Talks and Reports ... 105

eal Estate
Lot Sizes and Land Values ... 69
What Is Future of Real Estate Tax? ... 73

ecords, Municipal
Bridgeport Microfilms City Records ... 71

afety
Snow Removal and Anti-Skid Protection ... 11
Complete Skid Protection in Michigan's Capital City ... 77
A.P.I.C. Throws a Wrench at Modern Luminaires ... 117

chools
Community, School Facilities Integrated ... 75

ewerage and Sewage Treatment
Annual Sewage Conference ... 13
Post-War Plans for Sanitation Field ... 13
New Treatment Plant, Englewood, N. J. ... 13
Priority-Less Repairs ... 13
Sewerage in San Diego for National Defense ... 56

treet Cleaning and Snow Removal
Snow Removal and Anti-Skid Protection ... 11

treet Construction and Maintenance
Philadelphia Unreinforced Street Paving ... 11
Complete Skid Protection in Michigan's Capital City ... 77

Traffic and Transportation
New Plan for London ... 68
Neither Wac, Wave, nor Good Red Herring ... 111
Nonsense About the City of Tomorrow ... 113
A.P.I.C. Throws a Wrench at Modern Luminaires ... 117

Water Supply and Purification
Municipal Water Rates ... 9
New England Association to Discuss War and Post-War ... 9
One Year of Municipal Operation ... 9
Straightening Out Filter Problems ... 62
Post-War Plans for Sanitation Field ... 13
Cement Joints for Water Mains ... 61
Starightening Out Filter Problems ... 62
New Wells Overcome Water Shortage ... 63
Levelling the Low Pressure Areas ... 81
Wartime Water Rates ... 95
Water-Works Maintenance by Metallizing ... 103

Subscription, $2 per annum in United States and Canada ($3 to foreign countries)
Single copies, 35c; Back numbers, 50c

Entered as second-class matter, July 29, 1910, at the Post Office at New York, N. Y., under Act of March 3, 1879. Printed in U. S. A.

THE MUNICIPAL INDEX AND ATLAS, used in connection with the current advertisements in THE AMERICAN CITY, places local officials in the most favorable position to obtain all types of available equipment and supplies from manufacturers who desire to serve municipal government departments—555 pages, published annually by THE AMERICAN CITY MAGAZINE CORPORATION, 470 Fourth Avenue, New York 16, N. Y.

See pp. 18, 20, 22, 24, 127, 129, 139 for catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 150

Average age of these pavements — — 25 YEARS

26-YEAR-OLD TEXACO Asphaltic Concrete pavement on N. College Avenue, Bloomington, Ind.

23-YEAR-OLD TEXACO Sheet Asphalt pavement on Massachusetts Avenue, Indianapolis, Ind.

26-YEAR-OLD TEXACO Sheet Asphalt pavement on Bundy Avenue, New Castle, Ind.

. he city choosing a type of pavement for ıs post-war projects wants durability. With durability goes economy, because a long-lived pavement has a low annual cost.

That resilient, heavy-duty TEXACO Asphalt pavements are a wise choice for your post-war program is assured by the experience of hundreds of American cities. Pictured here, for example, are TEXACO Asphalt pavements in three Indiana cities, which average a quarter-century of service to date—with years of further service still to come.

TEXACO Sheet Asphalt and TEXACO Asphaltic Concrete, used on these Indiana streets, are equally suitable for your business thoroughfares and for your important residential streets. They give many years of service, whether laid on a new foundation or over worn concrete, brick or other existing pavements.

A TEXACO Engineer who specializes in Asphalt construction is at your service.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City

Boston Philadelphia Richmond Chicago Houston Jacksonville

TEXACO

REG. T. M.

TEXACO ASPHALT

Index to Contents, September 1943

(The ... to Contents appears at the back of the December issue each year.)

Airports and Aviation
Airways to Peace ... 76
Nonsense About the City of Tomorrow ... 113

Buildings, Public
Burbank's New City Hall ... 55
Community, School Facilities Integrated ... 75

Civilian Defense
Aid for CD Workers Injured on Duty ... 62
Rochester's City-County Fire System ... 91

City Manager Plan
City Manager Appointments ... 109

Conservation and Salvage
Maintenance of Water Supply Systems ... 9
Priority-Less Repairs ... 13
Water-Works Maintenance by Metallizing ... 103

Conferences and Conventions
Annual Sewage Conference ... 13
American Public Health Association Convention ... 15
Conventions—When and Where ... 125

Finance and Taxation
Lot Sizes and Land Values ... 69
What Is Future of Real Estate Tax? ... 73
Municipalities Setting Up Post-War Reserves ... 89, 125
New Sources of Municipal Revenue ... 91
Municipal Bond Market ... 109

Fire Prevention and Control
Durham, N. C., Replans Fire Service ... 17
New Crash Truck ... 17
What Are Fire Extinguishers For? ... 72
Rochester's City-County Fire System ... 91

Health and Sanitation
Vitamin Pills for Municipal Employees ... 15
Whooping Cough and Diphtheria Immunization ... 15
Plan Your Rodent Control ... 15
American Public Health Association Convention ... 15
Speeds Cure of Social Diseases ... 15
Public Health During the 60's ... 15
City Health Dept. Aids Slum Clearance ... 59

Housing
Tacoma Looks Forward ... 53
City Health Dept. Aids Slum Clearance ... 59
More than 2,500 Negroes Live in Each of These Cities ... 101
Governor Urges Housing Developments ... 109
Tomorrow's Job in Housing and Planning ... 122

Laws and Legal Decisions
City Health Dept. Aids Slum Clearance ... 59
Zoning and Planning Notes ... 121
Municipal Law Notes and Decisions ... 123

Lighting, Outdoor
A.P.I.C. Throws a Wrench at Modern Luminaires ... 117

Manpower
Balancing Wartime Manpower Needs ... 5
How the WMC Classifies Cities ... 93

Memorials
Janesville's Shrine of Honor ... 97

Motor Equipment
New Crash Truck ... 17

Officials and Employees
Late Once in 32 Years ... 7
Vitamin Pills for Municipal Employees ... 15
Aid for CD Workers Injured on Duty ... 62
Women Who Serve Their Cities ... 64, 109
North Dakota Engineer License Law ... 67
Part-Time War Work by City Employees ... 79
Municipal Salaries and Living Costs ... 107

Planning and Zoning
What Happens in Unzoned Areas ... 76
Weather, Climate, and City Planning ... 107
Zoning and Planning Notes ... 121
(See Also Post-War Planning)

Population
New Plan for London ... 68
Population Shifts—Wartime and After ... 83
More than 2,500 Negroes Live in Each of These Cities ... 101

Post-War Planning
Post-War Work in Cities ... 7
New England Association to Discuss War and Post-War ... 9
Post-War Plans for Sanitation Field ... 13
New Treatment Plant, Englewood, N. J. ... 13
Tacoma Looks Forward ... 53
New Plan for London ... 68
Local Government Is News ... 70
Airways to Peace ... 76
42 More Small Municipalities Report on Post-War Planning ... 87
More Cities Get Power to Build Cash Reserves ... 89, 125
Governor Urges Housing Developments ... 109
Nonsense About the City of Tomorrow ... 113
Tomorrow's Housing and Planning Job ... 122

Power Plants
Kilowatts for Crawfordsville ... 66

Priorities
Priority-Less Repairs ... 13

Public Relations
Local Government Is News ... 70

Publications
New Books and Pamphlets ... 127

Purchasing
Separate Equipment Bids Explained by Engineer ... 7

Quotable Thoughts
For Your Talks and Reports ... 105

Real Estate
Lot Sizes and Land Values ... 69
What Is Future of Real Estate Tax? ... 73

Records, Municipal
Bridgeport Microfilms City Records ... 71

Safety
Snow Removal and Anti-Skid Protection ... 11
Complete Skid Protection in Michigan's Capital City ... 77
A.P.I.C. Throws a Wrench at Modern Luminaires ... 117

Schools
Community, School Facilities Integrated ... 75

Sewerage and Sewage Treatment
Annual Sewage Conference ... 13
Post-War Plans for Sanitation Field ... 13
New Treatment Plant, Englewood, N. J. ... 13
Priority-Less Repairs ... 13
Sewerage in San Diego for National Defense ... 56

Street Cleaning and Snow Removal
Snow Removal and Anti-Skid Protection ... 11

Street Construction and Maintenance
Philadelphia Unreinforced Street Paving ... 11
Complete Skid Protection in Michigan's Capital City ... 77

Traffic and Transportation
New Plan for London ... 68
Neither Wac, Wave, nor Good Red Herring ... 111
Nonsense About the City of Tomorrow ... 113
A.P.I.C. Throws a Wrench at Modern Luminaires ... 117

Water Supply and Purification
Municipal Water Rates ... 9
New England Association to Discuss War and Post-War ... 9
One Year of Municipal Operation ... 9
Straightening Out Filter Problems ... 62
Post-War Plans for Sanitation Field ... 13
Cement Joints for Water Mains ... 61
Starightening Out Filter Problems ... 62
New Wells Overcome Water Shortage ... 63
Levelling the Low Pressure Areas ... 81
Wartime Water Rates ... 95
Water-Works Maintenance by Metallizing ... 103

VOL. LVIII SEPTEMBER
No. 9 1943

The American City

Issued Monthly by the
American City Magazine Corporation
470 Fourth Ave., New York 16

HAROLD S. BUTTENHEIM
Editor
ALDEN W. WELCH
Secretary and Research Editor
WILLIAM S. FOSTER
Engineering Editor

EDGAR J. BUTTENHEIM
President
HERBERT K. SAXE, Treasurer
PRENTICE C. FORD, Ass't to President
Maj. MYRON MacLEOD, Advertising Mgr.
(On leave of absence for military duty)

•

BRANCH OFFICES
Daily News Building, Chicago 6
GEORGE S. CONOVER, Vice-President

Mills Building, San Francisco 4
Western Pacific Building, Los Angeles 15
DUNCAN A. SCOTT & CO., Representative

•

Subscription, $2 per annum in United States and Canada ($3 to foreign countries)
Single copies, 35c; Back numbers, 50c
Entered as second-class matter, July 29, 1910, at the Post Office at New York, N. Y., under Act of March 3, 1879. Printed in U. S. A.

•

THE MUNICIPAL INDEX AND ATLAS, used in connection with the current advertisements in THE AMERICAN CITY, places local officials in the most favorable position to obtain all types of available equipment and supplies from manufacturers who desire to serve municipal government departments—555 pages, published annually by THE AMERICAN CITY MAGAZINE CORPORATION, 470 Fourth Avenue, New York 16, N. Y.

See pp. 18, 20, 22, 24, 127, 129, 139 for catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 150

DRESSER Manufacturing Company, Bradford, Pa.

Style 38, 12" ID size.

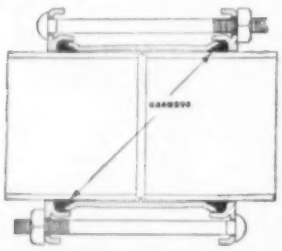
MAKERS OF FLEXIBLE PIPE COUPLINGS, FITTINGS, REPAIR CLAMPS AND SLEEVES FOR WATER LINES

Although heavily engaged today in the production of Rings and Forgings for War, we are glad to say that we are still able to supply Dresser Couplings and repair devices for the joining and maintenance of essential pipe lines. It has been demonstrated that Dresser Speed, Simplicity, Flexibility, and Tightness give the correct answer to many specific problems in the Water Works industry. Your inquiries and orders will receive, as usual, our prompt attention.

STYLE 38—DRESSER REGULAR STEEL COUPLING

This is a simple, compact pipe joint of sleeve-type design, equipped with compound-rubber gaskets and used to form a tight, flexible connection between sections of plain-end pipe. No loss of pipe-wall thickness—no damage to pipe lining. Couplings can be supplied with Armored gaskets in case it is desired to thaw a line electrically.

Each Coupling consists of a few standard, carefully-engineered, precision-made parts. Unskilled labor can readily assemble over pipe-ends, insert bolts, and complete installation, using a Dresser ratchet wrench as the only tool. When bolts are drawn up, each gasket is compressed into a pocket formed between middle ring, follower rings, and pipe. The result—a permanent, flexible, and pressure-tight seal under varying conditions of service.



Cross-Section view, Style 38 Regular Coupling

Steel Pipe Sizes, ⅜" ID through 96".

Light pattern for light wall steel pipe, 2" OD through 12" OD.

Cast-iron pipe, 2" CIP through 72" CIP.

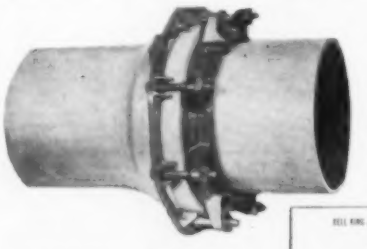
ADVANTAGES. Small working space. Protection of line and settings against stress, surge, vibration, expansion, contraction. Flexibility, permitting curves to be made in pipe lines using standard couplings and straight lengths of pipe.

STYLE 60—ADJUSTABLE BELL-JOINT CLAMP

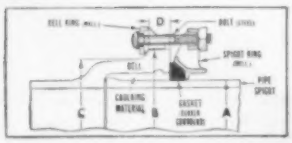
Widely used throughout the Water industry, the Dresser Style 60 Clamp definitely stops costly leaks through jointing material of bell-and-spigot connections. In many cases it is now used during installation of new lines to save expense of future repairs. Sizes: 3" CIP through 60" CIP.

WORKING PRINCIPLE

A flexible rubber-compound gasket is firmly compressed against the face of caulking material and the bell-face by bolts connecting the bell and spigot rings of the Clamp. Gasket pressure is evenly distributed circumferentially. Both bell and spigot rings are ADJUSTABLE within certain practical limits to accommodate variations in outside diameters of bells and spigots as found in different classes of cast-iron pipe.

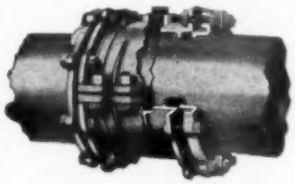


Style 60 Bell-Joint Clamp (malleable), for stopping leaks in bell-and-spigot joints.



STYLE 57
DRESSER CAST SPLIT REPAIR SLEEVE

This strong, compact, rubber-packed sleeve permanently repairs splits, breaks and holes in cast-iron pipe by completely enclosing them in a pressure-tight chamber. Each sleeve has a maximum inside clearance of 8". Two or more sleeve units may be connected by joiner parts to cover longer splits.



Cutaway view, Style 57 Dress Repair Sleeve.

Sizes: 2" CIP through 12" CIP. Recommended working pressure, up to 250 psi.

Ordinary labor can speedily install in a wet ditch or even under water. Installation under pressure is facilitated by grooved side-pack (an exclusive Dresser feature) and vent with plug. REPAIRS are flexible and tight for the life of the line.

STYLE 82
ADJUSTABLE REPAIR SLEEVE

Here is a completely self-contained, low cost, and adjustable Sleeve for sure and speedy repair of breaks, holes and splits in straight runs of 4", 6", 8" CIP. Inside length, 4" (5" for 8" CIP size). Recommended working pressure, up to 150 psi.

Style 82 Adjustable Repair Sleeve, for making repairs and service connections.

Sleeve (gray iron) consists of three A or B individual sections *(interchangeable to permit adjustability)*, each section complete with one side-gasket and two end-gaskets which are already in place. Six side-bolts join Sleeve sections.

Style 82 is flexible; tight on offset or deflected pipe; and serves as ideal tapping sleeve.

STYLE 65
DRESSER NO-THREAD COUPLING

Developed by Dresser, this handy Coupling (malleable) joins plain-end steel pipe in sizes 2" ID and smaller, through compression of rubber-compound gaskets by threaded end-nuts screwing up on a threaded middle ring.

It comes completely assembled. To install, loosen end-nuts, stab in pipe ends, and tighten end-nuts with an ordinary wrench. No pipe end preparation. No exact pipe fitting. Absolutely tight, amazingly flexible. Gaskets are Armored type, valuable for electrical thawing of service lines. Available also in Ells, Tees, and other Fittings.

Style 65 NO-THREAD Fitting, for use on pipe in sizes 2" ID and smaller.

Balancing Wartime Manpower Needs

Dayton and Springfield Join in Effective Community Action

THE campaign by which the Ohio neighbor cities of Dayton and Springfield halted in-migration and balanced their manpower needs with their supply of labor is perhaps the nation's outstanding example of effective community action on wartime manpower problems, the Office of War Information reported on August 26.

The OWI studied the Dayton-Springfield action and is issuing this report in the belief it may help other communities facing similar problems.

The Dayton-Springfield labor market area, which includes Prebble, Clark, Champaign, Greene and Montgomery counties, and for which Marion A. Gregg is the War Manpower Commission director, was reclassified on July 29 by WMC into Group II (areas of labor stringency or in which a labor shortage may be anticipated within six months). Since last winter, it had been in Group I (areas of acute labor shortage and, therefore, denied additional war contracts).

The change in classification enables Dayton and Springfield war plants to renew their present contracts and, in some cases, to accept new ones.

The community campaign also relieved much of the stress on community services and wartime living conditions in the area. It has stopped most of the flow of outsiders into the community where no housing was available to them and made it possible to carry on war production with the persons already established in Dayton and Springfield.

The Steps Taken

Dayton relieved its situation through the following steps:

1. The WMC area labor-management committee stopped in-migration. All manufacturers and retailers in the area agreed not to hire any persons who had been in the community less than 30 days, except with the approval of the United States Employment Service. Approval is granted only in cases of key workers or construction laborers, there being a local shortage of the latter. As a result, hiring of outsiders has fallen from 500 a week to about 125.

2. Dayton and Springfield manufacturers voluntarily agreed not to seek any contracts that would require them to hire more workers than they had estimated they would need in their O.E.S. 270 (manpower inventory) reports of May 1, accept with WMC approval.

3. Retailers, including the large department stores, agreed to reduce full-time employment to 1940 levels.

4. The Wright and Patterson air fields, for purposes of operating efficiency, adopted a policy of decentralizing wherever possible and took definite action toward fuller and better utilization of manpower at the fields.

5. The larger war plants declared a 10-day moratorium on hiring while determining the true manpower situation in the community.

6. Radio stations, posters, and newspapers warned outsiders to stay away from Dayton unless they possessed special skills not available in the community.

7. Manufacturers and the air fields were polled to secure revised and realistic estimates of future labor needs. It was determined that manpower estimates for the year ending May 1, 1943, were 11,085 more than actual hirings. The poll resulted in decreasing manpower estimates for the next three months by 9,622 and for the next year by 18,394.

8. Since women were the area's biggest source of potential manpower, manufacturers were asked to "reserve" certain occupations exclusively for women. It was found that women could do 6,000 jobs now being filled by men.

9. Volunteers conducted a Gallup-type poll of the women in the area and found there were more available for wartime jobs than had been estimated previously. WMC had credited Dayton-Springfield with 9,000 potential women workers not already employed. The new poll showed 10,137 women available full time, 7,508 part time, and 9,272 "available maybe."

10. An information campaign is now being conducted through newspapers, press, billboards, radio, motion pictures and special pamphlets to get women to take wartime jobs.

11. Stores, banks, ration boards, barber shops, beauty parlors and other community services were persuaded to remain open two nights a week for the benefit of war workers, the first war center in the nation to take this important step. After several weeks, the banks reported that transactions on one night are heavy; on the other nights light. Department stores reported their sales have increased although operating expenses remain the same.

12. Many Dayton families have responded to a patriotic appeal and have "opened their homes" to war workers. A house-to-house canvass made in connection with the appeal, located enough vacant rooms to house room-seekers in the area and leave a surplus of 850 rooms. Many families for the first time rented one, and sometimes two rooms.

13. 500 private homes were converted into apartments, several dormitories were erected and housing projects speeded to fill the acute need for family-type housing in the area.

14. Transportation facilities were improved. (See below.)

15. A special survey was made preparatory to organizing a community-wide recreational program in both Dayton and Springfield. (See below.)

16. Frills were eliminated from laundry and restaurant services so that more people could be served and waiting time decreased.

Child Care

At present, Dayton has an intake service center, where women can go to find out about child care facilities, and has five child care centers operating under the Board of Education. Five extended school programs are also in operation.

A trained investigator, paid from Community Chest funds, is now assisting the Council of Social Agencies in studying foster-home possibilities.

In Springfield, approval has been secured for four nursery schools and eight extended school programs.

Transportation

Shuttle train service was considered but investigation proved this to be impracticable.

A series of improvements has materially bettered the situation. These include addition of nine buses to the field service, improved parking lots at the fields which eliminated mud hole conditions, new loading shelters at the air fields and downtown, improvement of roads in the vicinity of air fields and changes in traffic regulations to speed the flow.

An extra lane highway between Wright and Patterson Fields is now nearing completion.

Recreation

Both Dayton and Springfield are organizing defense recreation committees to provide more relaxation and sports for the war workers of the area.

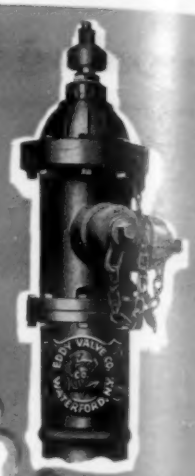
A survey is being made in Dayton under the direction of the field representative of the Office of Community Services of the Federal Security Agency to determine the nature of the local recreation problems and to propose means of solving them. A similar action is anticipated in Springfield.

One park, Eastwood, was made available to Wright Field employees three days a week while the Miami Conservancy (Food Control) District made a 100-acre park with a lake available exclusively to the Air Service Command.

Readers of THE AMERICAN CITY *desiring additional details regarding this Dayton-Springfield campaign should write to the Office of War Information for its August 26 release* (X-19332).

EDDY

VALVES
and
HYDRANTS
at the
NEW ENGLAND WATER WORKS CONVENTION



EDDY - the name known all over New England - as elsewhere - for high-grade Valves and Hydrants.

ROCKLAND — Where the President landed after the Historic Conference at sea.

BATH — Shipbuilding.

SOUTH PORTLAND — Shipyard construction.

PORTSMOUTH — Submarine building drydock construction.

BOSTON — Scene of N.E.W.W. Convention and other famous "tea parties". U.S. Naval Base and shipbuilding center.

WORCESTER ☆ MASS.

PLYMOUTH (1620)

NEWPORT — Naval training station and torpedo station.

GROTON POINT — Naval air base.

NEW LONDON — Submarine building.

NEW HAVEN — Guns, ammunition.

BRIDGEPORT — Aeroplane construction.

H. R. PRESCOTT AND SONS
☆ WORCESTER MASS.
NEW ENGLAND REPRESENTATIVE OF EDDY VALVE CO. WATERFORD, N. Y.

EDDY
VALVE CO.
WATERFORD, N. Y.

Our Municipal Notebook

Separate Equipment Bids Explained by Engineer

IN specifications drawn by Howard R. Green, consulting engineer, of Cedar Rapids, Iowa, additional light is thrown on the suggestion made by Mr. Green on this page in the July issue, that the city engineers include in their construction specifications fixed sums for each item of equipment, and take separate bids on the equipment instead of having each contractor-bidder shop around for the cheapest stuff that will get under the specifications:

"To facilitate (1) the receiving of proposals for the general contract and the comparison of the same on identical basis so far as equipment and construction are concerned, and (2) to eliminate the necessity for all manufacturers of various items of equipment quoting all bidders, and (3) to simplify the preparation of proposals on the general contract by the bidders, and (4) to permit the engineer and owner to select the various items of mechanical equipment on the basis of suitability, construction, and efficiency—as well as first cost—a system of fixed sums is set up on certan mechanical and miscellaneous items. These items are definitely indicated at appropriate points on the bidding blank. Where such fixed sum items are so indicated, the contractor shall assume that the purchase price f.o.b. cars at project, on each individual item will be as indicated.

"The bidder should estimate the cost of haulage, installation, and profit on each of the fixed-sum items and add the same to the fixed sum in preparing his proposal. At or about the time that formal proposals are received and publicly opened by the city, the engineer will request the manufacturers of equipment to file with him their definite specifications and quotations on the various items. Following the award of the general contract, a decision as to the selection of mechanical equipment will be made, whereupon the contractor will be advised in writing by resolution of the city council of the items selected, the names of the manufacturers, and the actual purchase price of said equipment on cars, freight allowed, at project. Thereupon, the contract sum will be adjusted to compensate for any discrepancy between the actual purchase price of said equipment and the fixed sum used in the written proposals. The purchase transaction shall be between contractor and the indicated manufacturer of equipment.

Protection for Contractors from Manufacturers

"Inasmuch as the contractor is required to furnish a maintenance bond guaranteeing the completed construction against defects of workmanship or material, he should at his option secure from the various manufacturers equivalent protection; and each respective manufacturer of mechanical equipment in submitting his quotation and specification of equipment offered, does hereby and by so doing agree to furnish such equivalent guarantee to the contractor, and through him to the city. The items covered under the fixed-sum qualifications are as tabulated in the bid blank and as described in this specification.

"At or about the time that bids are received for the construction of the project, the owner will also receive quotations and specifications from manufacturers of said mechanical equipment. The owner will make selection from said offerings and will notify the contractor of the items which he is to purchase and the purchase price thereof. Thereupon, the contract sum will be adjusted to compensate for any variation between the fixed-sum used by the contractor in bidding the work and the final purchase cost. Note that all such prices are to cover the purchase price of the equipment with freight allowed to project. Fixed-sums also include the electrical starting equipment for all motor-driven units unless specifically excluded. Fixed-sum items do not include installation or profit to the contractor."

Post-War Work in Cities

STRIKING testimony to the growing interest throughout the United States in post-war urban planning is to be found in the publication last month by *Contractors and Engineers Monthly* of three special articles under the heading of "Post-War Work in Cities." The articles discuss in some detail streets, subways, sanitation, utilities, and municipal financing and housing plans. An editorial note calls attention to the need for basic improvements in the municipalities of this country and to the employment opportunities which would result from a basic program of municipal public works. The importance of starting designs for such work *now* is also stressed.

Late Once in 32 Years

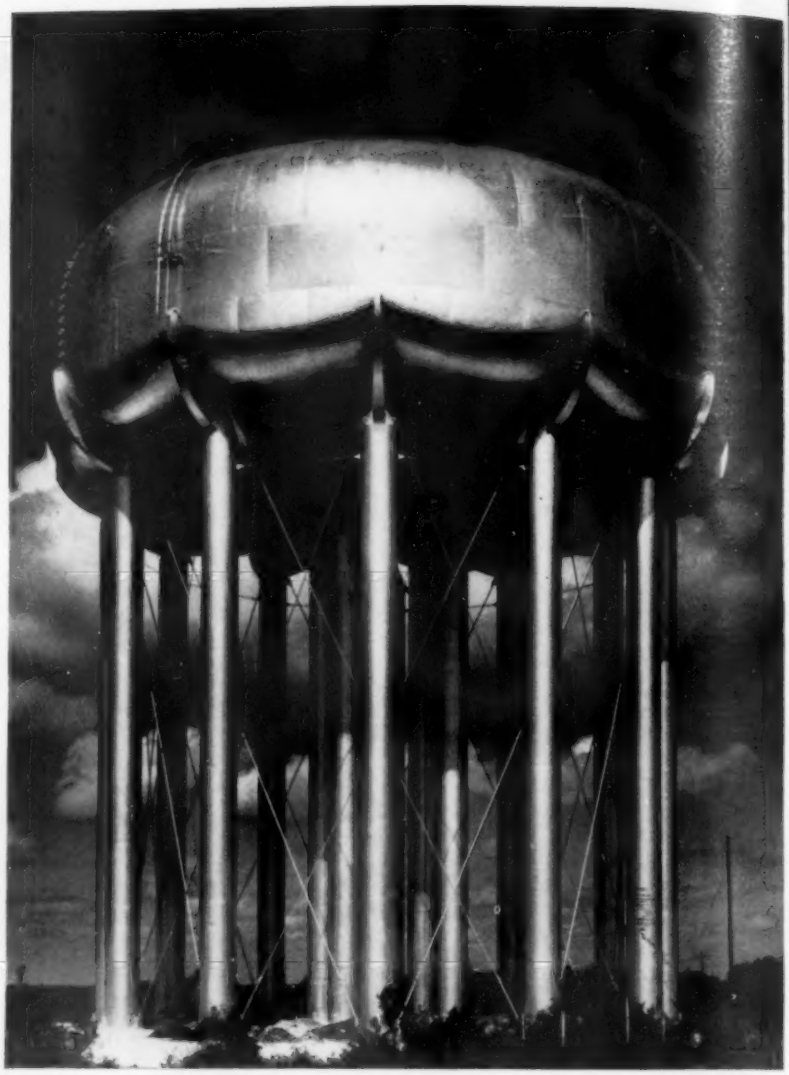
WITH all the talk of unioneers and labor racketeers, strikes and absenteeism, it may be reassuring occasionally to take a good look at an actual workman. Here is David A. "Dad" Teeter, who in 32 years with Mack Trucks, Inc., was late to work once. At 85, he is supervisor of the company's carpentry shop in North Plainfield which flies the Army-Navy "E"—which Dad accepted in the name of the employees.

Is your community ready?
FIRE PREVENTION WEEK
October 3-9
Underwriters' Laboratories, Inc., 207 E. Ohio St., Chicago, Ill., offers aid to city officials through leaflets and movie films.

BOOSTING *Storage Capacity*

TO 5,230,000 GALS.!

. . . in San Antonio's waterworks system



WHEN the city of San Antonio, Texas, erected two new Horton elevated tanks in 1941, it increased the storage capacity of its waterworks system to 5,230,000 gals. The largest of the two new structures, a 1,500,000-gal. radial-cone bottom tank, is illustrated above. This pleasing design does not include a conventional balcony, and carries the inner ends of the bottom girders on a cluster of tubular columns instead of one large central riser. It was installed in the southeast section of the city and is used in conjunction with a 2,480,000-gal. Horton ornamental standpipe erected in 1930. The smaller tank, shown at the left, has a capacity of 250,000 gals. and provides northern sections with a more uniform pressure during peak periods.

ARMY E NAVY

. . . Awarded to our shipyard at Seneca, Ill., and our dry dock yards at Eureka, Calif., and Newburgh, N. Y.

CHICAGO BRIDGE & IRON COMPANY

NEW YORK • CHICAGO • TULSA • CLEVELAND • HOUSTON • HAVANA
PHILADELPHIA • SAN FRANCISCO • BIRMINGHAM • WASHINGTON

Water-Works Operation

Municipal Water Rates—Their Wartime Trend

THIS month THE AMERICAN CITY renews in a modest way the publication of water rates similar to those that have appeared in this publication periodically since 1934. The first installment appears on page 95 of this issue.

Distinguishing features of this recent study are the inclusion of data for each city, describing briefly the type of plant and distribution system that the rates support and a few characteristics of the water that the consumer purchases. To aid in comparison, costs have been calculated for monthly consumption of 3,000, 5,000, and 10,000 gallons.

Of the four cities whose rates are published in this issue, all receive water chiefly from either rivers or impounding reservoirs. Winchester, Mass., holds the honors for the most favorable rates in the lower brackets. One factor that undoubtedly helps is that the water requires only chlorination and an application of Calgon for treatment. Interesting also are the rates of Elizabeth, N. J. Sam Newkirk, engineer and superintendent, holds the unique position of being a "dealer in water," having some four sources of supply available on a wholesale basis.

Regarding the rates themselves, the most interesting perhaps, are those of Lewiston, Maine. Here the majority of services are on a flat rate basis. By comparing the flat with the metered rate, it is easy to see why the former is more popular. Furthermore, it is not difficult to see where inequalities would occur, forcing some consumers to pay more for their just share of water.

New England Association to Discuss War and Post-War

THAT the period of bracing the water utilities for war is substantially over and that the time has come for applying these lessons to the long-time post-war period, can be seen from the program that the veteran New England Water Works Association has set for itself during its annual meeting, September 28 and 29, to be held in the Hotel Statler, Boston.

Regarding the standard water-works design and operation, the latest developments in hydraulics of distribution systems will be subjected to the exacting analysis of Thomas R. Camp, Associate Professor of Sanitary Engineering, Massachusetts Institute of Technology. Emergency chlorination, brought sharply to the fore during this war period and always important, will be explained in detail by means of a sound-motion picture presented through the courtesy of the New York State Department of Health.

More actively concerned with the war will be papers on naval base water supplies and air raid fire protection. Capt. C. Y. Dickeman, CEC, U.S.N., and Lt. (jg) D. H. Bennet, CEC, U.S.N., will explain details on water supply equipment and facilities for advanced naval bases. Horatio N. Bond, Chief Engineer, National Fire Protection Assn., will present his observations on water supplies for air raid protection. Mr. Bond recently returned from England where he studied fire protection methods as a representative of OCD.

Post-war planning will also remain in the forefront. The association plans to conduct a symposium on this subject, having such speakers as E. L. Filby, Field Director of the newly-formed National Committee on Water and Sewage Works Development; and Dudley Harmon, Executive Vice-President, New England Council Regional Vice Chairman, The Committee for Economic Development. This association was one of the first to present an organized post-war plan for both water works and manufacturers.

One Year of Municipal Operation

APRIL 1943, marked the first year of municipal operation of the water works for the town of Williamstown, Mass. On April 1, 1942, the town acquired all the holdings of the former Williamstown Water Company for the sum of $318,500. Bonds covering a 30-year period were issued to finance the transaction.

The source of water for this service consists of four impounding reservoirs; three high service and one low service. The water is gravity fed into the town with a maximum pressure of 160 pounds and minimum of 75. In extremely dry seasons and emergencies, a Worthington pump displaces water from the low service mains to the high service. Proportioneers Chloro-feeder equipment is used to chlorinate the water, and a complete set of laboratory equipment insures control.

Wartime Maintenance of Water Supply Systems

"THERE are other ways of increasing the capacity of your water-supply system than by building a bigger plant," said F. J. Veale, Superintendent of Water Works, Hamilton, Ontario, at the recent Canadian Section meeting of the American Water Works Association.

Cleaning Pipes

One of the means may be water pipe cleaning, a solution that should be studied from a strictly engineering standpoint. Examination of the mains often discloses points where tuberculation has been heavy. However, Mr. Veale pointed out that it will be a great mistake to assume that cleaning will be necessary only in those heavily coated pipes. Experience has shown that the flow of water through pipes is affected just as seriously by the small lumps or nodules, even though they are only 1/16 inch in height and spread some distance apart. This condition may account for losses of 30 to 50 per cent in large mains and may be much greater in small mains.

"Cleaning alone, however, may not provide a complete solution," he stated. "Adequate cross-connections should be studied as well as the condition of existing valves. Some valves may have been carelessly closed and then lost track of by being covered through grading operations or paving. Again, reverse operating valves may confuse the work. These strongly indicate the need for accurate records and for the inspection of all valves at regular intervals."

Depreciation of Mains

Mr. Veale stated that water works men should recognize depreciation in their water mains. One method is to set a probable life of the pipe at the time of construction, based on experience. A second more accurate method is to cut out sample sections at various points, clean and weigh them, and then check this weight against the pipe when new. The third method, which he feels is the best, calls for the use of Pitometer readings at fixed points to determine the flow coefficients through the pipe. Once these facilities have been set up it is relatively easy to repeat test from year to year and thus accumulate data for a history chart.

DURABILITY

TO KEEP YOUR GRADERS ROLLING FOR VICTORY...

- ✓ Check condition of engine regularly.
- ✓ Change lubricating oil and renew filter elements every 100 hours of use.
- ✓ Lubricate all parts of grader regularly.
- ✓ Service air cleaner every 10 hours of use.
- ✓ Clean fuel oil filters at least every 60 hours.
- ✓ Don't ride clutch. Adjust clutch pedal when and as needed.
- ✓ Keep electrical system in good condition —check battery regularly.
- ✓ Keep lost motion out of grader—use adjustments for wear and replace parts worn out.
- ✓ Keep tires inflated to recommended pressure.

If you need help or advice on any of the above, see your local Adams distributor.

JUST AS MODERN TANKS are built to take the terrific battering of front line warfare, so Adams Motor Graders are built to withstand the severe shocks and stresses of carving roads, airfields and naval bases out of all kinds of terrain in all parts of the world . . . Whether in the frozen tundra of Alaska, the rocky hills of Tunisia or the dense jungles of New Guinea, Adams machines keep hard at work with minimum attention . . . DURABILITY is but one of the many Adams features you'll want to consider when choosing equipment for your post-war jobs!

J. D. ADAMS COMPANY • INDIANAPOLIS, INDIANA

Adams motor graders, leaning wheel graders, elevating graders, hauling scrapers, tamping rollers, bulldozers and road maintainers are used by allied forces throughout the world.

Adams

ROAD-BUILDING AND EARTH-MOVING EQUIPMENT

Street Construction and Snow Removal

Further Details on

Philadelphia's Unreinforced Street Paving

As most of the paving (see p. 46, July THE AMERICAN CITY) is being laid in residential areas on streets with curbs, it is impractical to spread and finish by machine, so this work is done by hand. As a consequence the slump at the job is held to about 3 inches. Vibrators are not generally used except along forms or curbs in lieu of hand spading. Expansion joint material is placed against the face of the curbs and around all utility structures. Dummy joints are formed around utility structures, so that should one be damaged the concrete adjacent to the structure could be removed without breaking back into the remaining street surface.

Under normal weather conditions traffic is excluded from the paving for seven days, but in cold weather it may be excluded for a longer period.

There are three methods of curing:

1—Burlap covering—saturated with water during daylight hours for the first 3 days—for seven days.

2—Burlap covering, saturated with water for first 24 hours; burlap removed, and the surface coated with one of the membrane curing agents.

3—An immediate application, after excess water has disappeared, of either a bituminous membrane or a tinted non-bituminous membrane.

Experience indicates that concrete laid at an air temperature less than 60 degrees Fahrenheit should have more frequent (shorter spacing between) expansion joints than that laid in a higher temperature. It is not recommended that the thickness of the joint material be doubled, in lieu of more joints.

The program completed in the year 1942 included the paving with Portland cement concrete (steel-free section) of 28 city blocks, having an average length of 450 feet each. With a few exceptions, this work was done under private contracts financed directly by the operative builders at a total cost of approximately $104,000.

An ordinance approved August 20, 1942, authorizes the Director of Public Works to permit owners of property to pave or repave in front of their properties with granite block, sheet asphalt, vitrified block, Portland cement concrete, or bituminous concrete, at no expense to the city. This repealed an ordinance approved April 12, 1909, as amended July 13, 1915, which did not permit the use of cement concrete as a paving material.

Work in progress on the paving of the track area on one of Philadelphia's streets. Note the markers on each side of the new construction indicating the location of contraction joints.

The concrete mix is 1:2:3 by volume; 5.4 gallons of water are used per sack of cement; it is central plant mixed, and is hauled in agitating trucks to the work. The average length of haul is four miles. Compression tests average 5,600 pounds per square inch.

DUDLEY T. CORNING,
Chief, Bureau of Highways and Street Cleaning, Philadelphia.

Snow Removal and Anti-Skid Protection

On page 77 of this issue, Palmer Slack, Assistant Director of Public Works, Lansing, Mich., tells how streets in this northern city are kept safe for winter travel. Mr. Slack dwells on anti-skid measures, rather than actual snow removal, and favors using an abrasive with calcium chloride in order to provide the proper protection.

This discussion obviously brings up the lively alternate, the so-called "bare pavement" method of anti-skid protection. By using one of the chlorides without an abrasive during a snowstorm, many progressive city engineers feel that they can entirely eliminate the snow and ice, leaving the bare pavement for a riding surface. This method is finding increasingly successful use—New York City is one notable example, and Mr. Slack's sister city of Detroit is another.

What Is "Bare Pavement" Method?

Before going too far, one should learn exactly what the "bare pavement" method really means. It does not mean that a chloride shall be used to melt the entire snowfall and supplement work of plows. What is does mean is that a chemical, generally salt because it is somewhat cheaper, will be applied to the street during the storm to keep the snow and ice from bonding to the surface. This makes the job of plowing much simpler and less expensive. The purpose is to keep the street clean and bare by this plowing action rather than melting.

Even as good practice dictates that plowing should begin early, while the storm is in progress, this application of salt should begin when the snow first begins to fall. It obviously is a mistake to expect the salt to penetrate the entire depth of snow and do good work. It should preferably precede the plows, whereas the abrasive plus calcium chloride should follow them.

Damage to Pavement by Salt

Incidentally, the argument that either salt or calcium chloride will damage the street surface particularly if it is concrete, is of doubtful validity. The most pertinent refutation is that in the manufacture of salt, concrete vats are used that must hold a brine far more concentrated than the slightly salty water that would run across the pavement.

Finally, one cannot ignore those engineers who stoutly advocate an early and thorough job of plowing without the necessity of resorting to the aid of chlorides. By equipping your department with husky, sure-footed trucks and plows, such as the Walter Snow Fighter or equal, these men state that the streets can be cleared quickly and simply. The Boston Transit Commission is a notable example of this method.

Mr. Slack, incidentally, is no longer with the Lansing Department of Public Works. He resigned not long ago to accept a commission in Uncle Sam's colorful, hard-working, and hard-fighting branch of the Navy, the Seabees.

THE DORR COMPANY
570 Lexington Avenue
New York, N.Y.

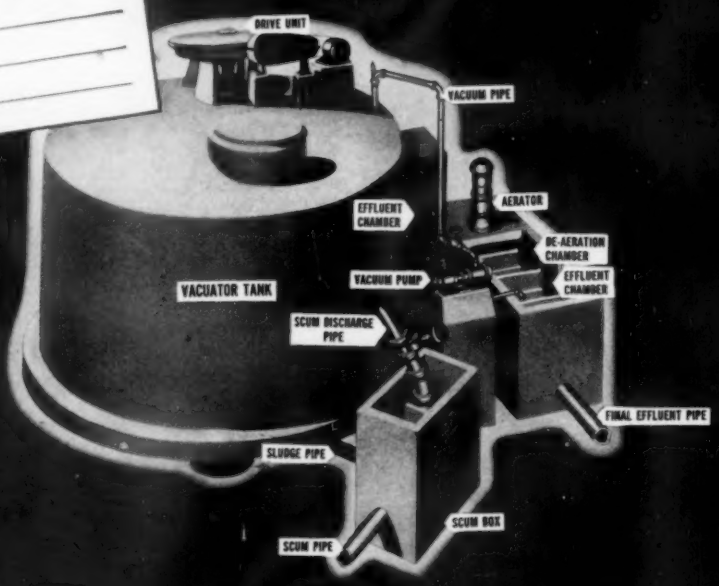
Please send me further information on the Dorrco Vacuator—no obligation, of course.

*Name*_____

*Street Address*_____

*City*_____

ANNOUNCING



the Dorrco Vacuator

a new unit that can lick the grease and scum removal problem!

IF the presence of grease or scum in domestic sewage is one of your headaches it will pay you to fill out the coupon above. For the Dorrco Vacuator is a new, highly efficient unit developed specifically for the solution of the grease and scum removal problem.

Operating at high overflow rates and low detention periods, the Vacuator makes a three product separation. It efficiently removes grease and scum as one product, and produces a sludge containing substantial quantities of grit and an improved effluent for subsequent treatment as well. Unsightly and inefficient skimmers are eliminated by its use, and odor nuisance is impossible as a result of the closed Vacuator tank. Due to the basic principle involved power requirements are extremely low.

The coupon above will bring an immediate reply—or better still, let us have a Dorr engineer call and show you how the Vacuator can lick *your* grease or scum removal problem.

DORRCO

THE DORR COMPANY, ENGINEERS

NEW YORK, N.Y. . . . 570 LEXINGTON AVE.
ATLANTA, GA. . . . WILLIAM-OLIVER BLDG.
TORONTO ONT. . . . 80 RICHMOND ST. W.
CHICAGO, ILL. . . . . 221 NO. LA SALLE ST.
DENVER, COLO. . . . . COOPER BUILDING
LOS ANGELES, CAL. . . . . 811 WEST 7TH ST.

RESEARCH AND TESTING LABORATORIES
WESTPORT, CONN.

SUGAR PROCESSING
PETREE & DORR ENGINEERS, INC.
570 LEXINGTON AVE., NEW YORK

DORR

RESEARCH ENGINEERING EQUIPMENT

ADDRESS ALL INQUIRIES TO OUR NEAREST OFFICE

Sewerage and Sewage Treatment

Annual Conference

THE treatment of industrial wastes will be one of the feature discussions in the annual meeting of the Federation of Sewage Works Associations to be held in Chicago, October 21 to 23. This discussion will be led by Dr. F. W. Mohlman and will help operators handle the tremendous problems resulting from industrial expansion brought about by the war. Dr. Mohlman is a director of the laboratories of The Sanitary District of Chicago.

Among the interesting added features will be an appraisal of sanitary activities in Latin America, with particular emphasis on opportunity for North American engineers and manufacturers. The speaker will be Gordon M. Fair, Professor of Sanitary Engineering, Graduate School of Engineering, Harvard University, and Consultant to the Division of Health and Sanitation of the Office of Inter-American Affairs.

Post-War Plans for the Sanitation Field

"BLUEPRINT NOW!" is the practical and energetic watchword of the Committee on Water and Sewage Works Development that has just been organized jointly by the New England Water Works Association; the Federation of Sewage Works Associations; the American Water Works Association; and the Water and Sewage Works Manufacturers Association. Headed by Dr. Abel Wolman, Professor of Sanitary Engineering, Johns Hopkins University, and immediate past-president of the A.W.W.A., and past-president of the A.P.H.A., the committee advocates the sturdy and self-reliant theme that "Every city in North America is entitled to have, and with good manlagement is able to pay for an adequate, safe, and satisfactory water supply—and as a good neighbor to other cities, likewise with good management is able to dispose of its wastes in a manner that offends neither its own citizens nor its neighbors."

Serving under Dr. Wolman will be a full-time Field Director, E. L. Filby who received a leave of absence from Black and Veatch, Kansas City consulting engineers; Committee Secretary Harry E. Jordan, secretary to A.W.W.A.; and eight committee members. These are E. Sherman Chase of Metcalf and Eddy, consulting engineers of Boston; C. A. Emerson, of Havens and Emerson, consulting engineers, New York and Cleveland; S. B. Morris, Dean of Engineering, Stanford University; C. H. Becker of the R. D. Wood Co., Philadelphia; Roger W. Esty, water-works superintendent, Danvers, Mass.; G. J. Schroepfer, chief engineer, Minneapolis, St. Paul Sanitary District; and C. A. McGinnis, of the Johns-Manville Sales Corp. Staff activities will center at the office of the A.W.W.A., 500 Fifth Ave., New York, N. Y.

The committee plans to appraise the needs for both water and sewerage; to stimulate the preparation of orderly programs to meet the needs; to encourage the preparation of detailed plans, specifications, and financing; to study the authority under which projects can be constructed, and to schedule actual construction wherever possible.

Also stimulating post-war planning, particularly in the sewerage field, is a Committee for Joint Action on Post-War Sanitation. Headed by Morris M. Cohn, Editor, *Sewage Works Engineering*, sanitary engineer for the city of Schenectady, consulting engineer and meterologist, this committee has a membership of 26 men well known in the sewerage field. Dr. Wolman, Mr. Emerson, and Mr. Schroepfer are on both groups.

Cash Ready for Post-War Plant

ENGLEWOOD, N. J., is going to have more than just plans ready for its new sewage-treatment plant to be built during the post-war period. This city will have cash in the bank to help pay for the construction cost.

The sewage system was purchased about a year ago from a private utility and is operated on a service charge based on the number of connected fixtures. Since its purchase, a surplus has been built up in the account and is being reserved for the improvement of the sanitary sewer system and the proposed sewage-treatment plant.

Because of the need of these improvements, the city plans to maintain its present sewer rental charge in order to continue building up this reserve.

The good business policies of the entire business administration may be seen in the fact that the cost of operation for the past ten years has been strictly within city income. The city has been able to do this despite a substantial reduction in assessed valuations.

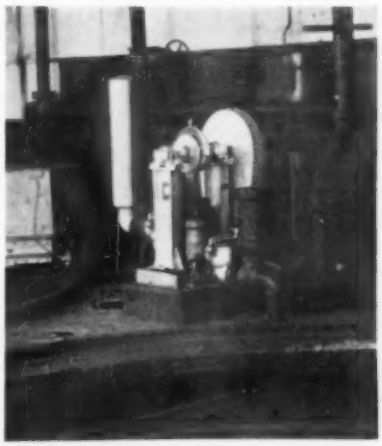
Plans for the proposed treatment plant are being prepared by G. Russell Hartley, City Engineer.

Priority-less Repairs

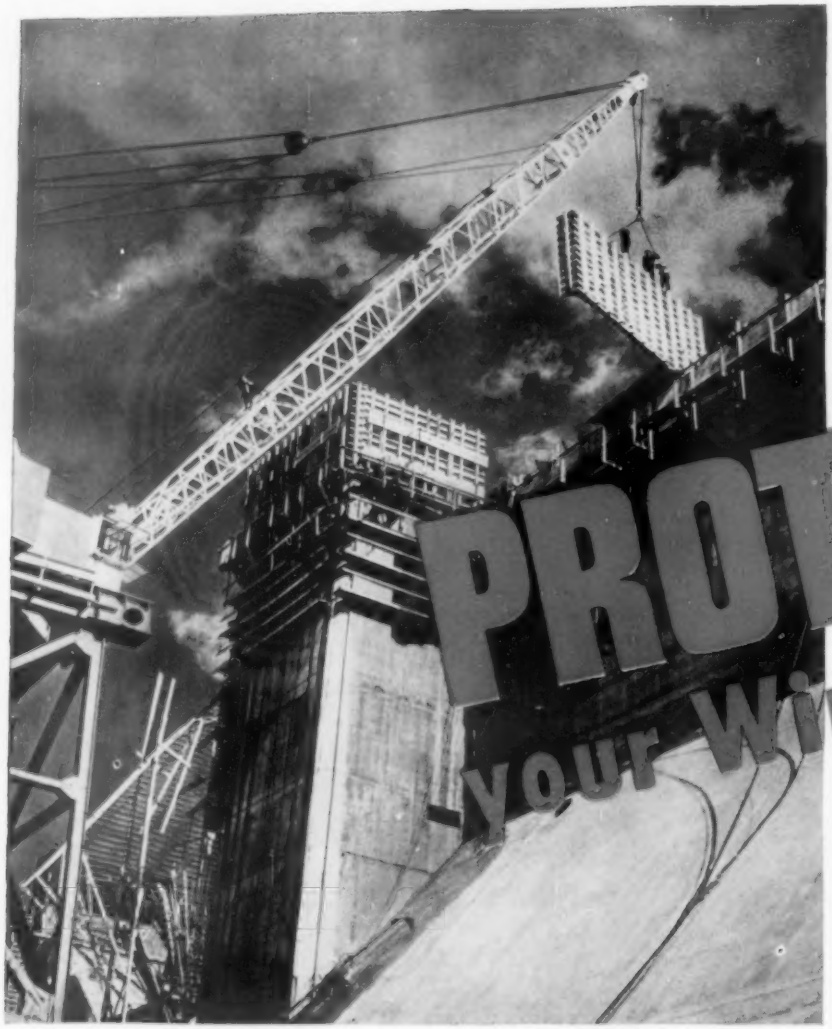
PRIORITY restrictions didn't present an insurmountable barrier when Walter Sperry, Superintendent for the Aurora Sanitary District, found himself faced with the need for repairing the Carter sludge pump used in the treatment plant. Here is what he did.

The piston in the pump developed grooves and holes after long and continued use and needed replacement. However, to avoid dipping into the replacement reserves, he arranged to have a new one cast in a local foundry. To provide a pattern ,the foundrymen were able to use the old piston without any difficulty.

Trouble with the gears in the secondary settling tank also seemed incurable when, last October, the mechanisms failed for the fifth time. This time Mr. Sperry enlisted the help of the Stephens-Adamson Mfg. Co. of that city. Careful measurement of the transmission gear case by this company's engineers revealed that the two lines of the shaft were slightly out of line. A local machine shop corrected this by ingeniously placing shoes on the flanged ring of the two plates carrying the transmission box. This allowed the shaft to be raised just enough to make up for the 1/16th inch eccentricity. A sizeable hole was drilled in the top of casting so that the gears could be inspected easily.



The sludge pump that was repaired without the need for WPB blessing.



PROTECT your Wire Ropes

SWINGING this huge concrete form into place typifies the vital importance of protecting wire ropes against excessive wear and corrosion.

Not only in the building of giant dams, but in all work involving the use of cranes, derricks, hoists, shovels, drag lines, etc., operators everywhere are protecting their wire rope by lubricating it with *Texaco Crater*.

Texaco Crater penetrates to the very core, sealing each wire in a tough, viscous film that reduces internal friction and wear, keeps out moisture, rust and corrosion. So effective have Texaco lubricants proved in increasing output that they are definitely preferred in the several important fields listed on the right.

A Texaco Lubrication Engineer will gladly cooperate in the selection of the most suitable lubricants for your equipment. Just phone the nearest of more than 2300 Texaco distributing points in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

THEY PREFER TEXACO

- ★ *More locomotives and railroad cars in the U. S. are lubricated with Texaco than with any other brand.*
- ★ *More revenue airline miles in the U. S. are flown with Texaco than with any other brand.*
- ★ *More buses, more bus lines and more bus-miles are lubricated and fueled with Texaco than with any other brand.*
- ★ *More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.*
- ★ *More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.*

TEXACO

TEXACO CRATER

TUNE IN THE TEXACO STAR THEATRE EVERY SUNDAY NIGHT – CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

Public Health

Vitamin Pills for Municipal Employees

THERE is no justification for the promiscuous distribution of vitamin preparations to workers generally, whether in an industrial plant or in a municipal office. This represents the joint findings of both the American Public Health Association and the Nutrition and Food Conservation Branch of the Food Distribution Administration, Washington, D. C., and is the result of inquiries arising from the practice of distributing vitamin pills to various municipal employees during the winter months in an effort to improve their health.

Reginald M. Atwater, M. D., Executive Secretary for the American Public Health Association states that, so far as he knows, there has been no competent authority who has seriously advocated the routine distribution of these pills to employees in order to reduce absences because of colds and similar illnesses. He also states that the authorities believe that the best source of vitamins is a regular diet of good quality.

Dr. William H. Sebrell, Deputy Assistant Director, Associate Chief of the Food Conservation Branch, states that there is reason to believe that people who are deficient in one or more vitamins would be benefitted by correcting these deficiencies. However, he also asserts that there is no justification for the promiscuous distribution of these products. The consensus of scientific opinion at present, he feels, is that studies have shown "vitamin pills" to be ineffective in materially reducing the incidence of colds in large groups of people.

Whooping Cough and Diphtheria Immunization

A LITTLE more than a year ago, the Health Department for the city of Newark, N. J., started a campaign for the immunization of children against whooping cough and diptheria with a combined vaccine. This treatment consisted of three injections one month apart. In this manner 4,037 pre-school children were immunized during the year.

A similar type of combined vaccine was tried as a research project by the Department in 1940. Out of 800 pre-school children, over 600 were later tested and showed 98½ per cent negative by the Schick test. Although the total killed organisms being used in the present series is less than the amount used for pertussis vaccination alone, officials believe considerable protection will be afforded.

The Department states that it will be sometime before sufficient case rates and severity rates can be determined to allow judgment of the value of this combined material as far as whooping cough is concerned. However, they have already received favorable evidence. In a number of families the child so treated had been exposed to a brother or sister with whooping cough, and either did not develop the disease or developed it to a mild degree.

An outstanding value of this practice is that it will offset any tendency of parents to neglect diphtheria protection because of the rarity of the disease. Newark has had only two cases of diphtheria and no deaths in almost four years.

Plan Your Rodent Control

MUNICIPALITIES that set out on an effective rodent control program, says G. C. Sherrard, Senior Surgeon (R), U. S. Public Health Service, should realize that it requires foresighted planning. In the May *Public Health Reports* he states that rodent control will be found in the continuous application of control measures rather than occasional campaigns.

To effectively control these rodents, Dr. Sherrard urges that municipalities adopt the slower and more difficult method of "building them out" by ratproofing areas where they breed rather than to expect permanent results from poisoning or trapping. It is important also to eliminate possible food supplies, thereby serving the double purpose of depriving the rodents of sustenance and conserving commodities vitally needed for human consumption.

Where plague or typhus exists, or is suspected in either human or rodent form, more vigorous action is indicated. Under these circumstances emergency fumigation, trapping, and poisoning should be promptly undertaken and continued as long as laboratory examinations indicate the presence of infection.

The 72nd Annual Meeting

American Public Health Assn.

A Convention by Radio

Hotel Pennsylvania, Oct. 12-14

New York City

Speeds Cure of Social Diseases

"EARLY syphilis and gonorrhea can now be cured in 15 days in eighty per cent of cases; but the new rapid treatment methods are not without danger, and only expert physicians can safely guide treatment and apply the periodic tests to determine whether cure has actually been achieved," recently said Dr. Walter Clarke, Executive Director, American Social Hygiene Association, a participant in the National War Fund. Dr. Clarke spoke before a conference sponsored by the Denver Public Health Council and the American Society Hygiene Association held at the Cosmopolitan Hotel.

"New rapid treatments of syphilis and gonorrhea are revolutionizing the control of these diseases," Dr. Clarke said. "The old standard methods of syphilis treatment are effective if followed long enough, but at least fifty to sixty per cent of patients fail to complete treatment and many become infectious again. This difficulty of keeping patients under treatment for a year or more is overcome in specially staffed hospitals by applying the new therapy, which renders venereal diseases noninfectious in a few days."

Public Health During the 60's

TYPICAL of the metropolitan cities of the East was New York, which during the 60's gradually became the natural home of every variety of contagious disease, and the favorite resort of foreign pestilences. Smallpox, scarlet fever, measles, diphtheria were domestic pestilences with which the people were so familiar that they regarded them as necessary features of childhood. Malarial fevers, caused by the mosquitoes bred in the marshes—perfect culture-beds—were regularly announced in the autumnal months as having appeared with their "usual severity."

—By Stephen Smith—Quoted in *The Standard of Living in 1860*, by Edgar W. Martin.

NO LABOR "DAZE" WITH MATHEWS HYDRANTS

They make light work of maintenance, every day of the year. The removable barrel, containing all working parts, eliminates pick and shovel work entirely. If you do have minor repairs or adjustments, they can be made right on the job. Other repairs go back to the shop for rainy days.

No one has ever improved on the Mathews principle of the removable barrel. All that has to be done is to give the complete barrel a couple of twists . . . lift out the whole unit through the loose protection case . . . and replace it with a new or reconditioned barrel. Mathews Hydrants offer your community many other worthwhile advantages, too.

Write for complete information.

MATHEWS HYDRANTS

400 CHESTNUT STREET, PHILADELPHIA, PA.

ESTABLISHED IN 1803

Made by R.D. WOOD Company

MANUFACTURERS OF SAND SPUN PIPE (CENTRIFUGALLY CAST IN SAND MOLDS) AND R. D. WOOD GATE VALVES

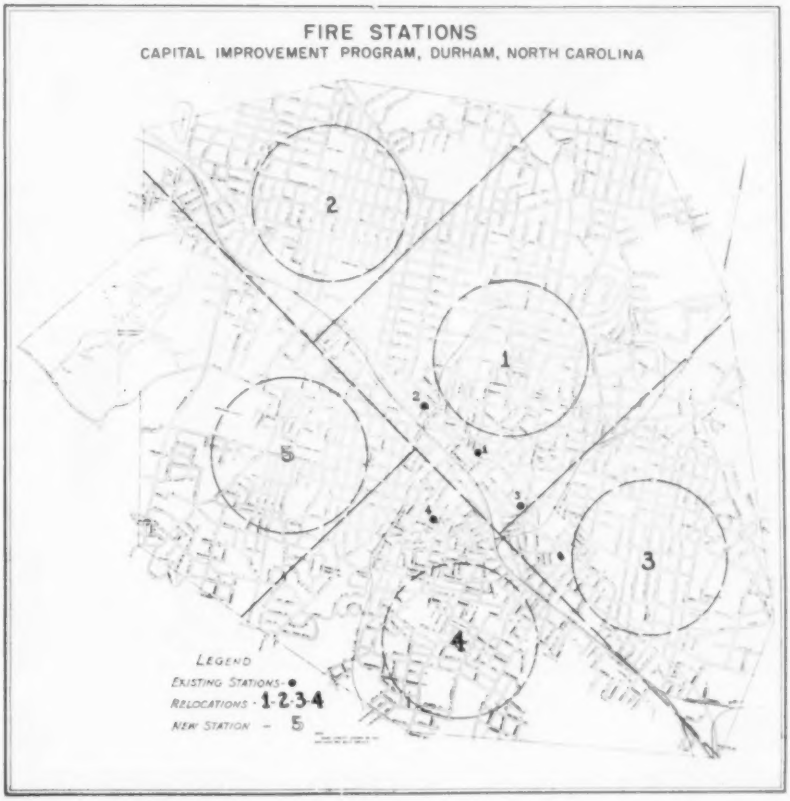
Durham, N. C., Replans Fire Service

ALL four of the fire stations in Durham, N. C., are outmoded and located in the congested center of the city. Narrow streets, heavy traffic, and numerous grade crossings impede prompt fire protection service to many built-up areas. It is proposed to replace all four stations at strategic locations, and to build and equip a fifth in the Forest Hills section. The new station sites should be selected somewhere within the circles shown in the illustration in order to serve all of the five major sections of the city. To do this, sites must be obtained and plans drawn so that as soon as materials and labor are available these essential improvements can be commenced in accordance with the following schedule:

Description of Work	Estimated Cost	Year of Program
Replace existing Station Two	$80,000	1st
Replace existing Station One	75,000	2nd
Replace existing Station Three	47,000	3rd
Replace existing Station Four	44,000	4th
Build and equip new Station Five	105,000	5th

Relocation of existing stations will not require additional expenditures for equipment, maintenance, and operation. The new Station Five will need additional equipment, the cost of which is included in the above estimate, and will involve continuing additional maintenance and operation costs of some $12,000 per year.

HENRY A. YANCEY,
City Manager.



New Crash Truck Throws High-Pressure Fog

WHEN a battle-scarred airplane with bullet-riddled controls and flak-ripped wings limps back to its home field after mauling a Jap or Nazi convoy, a crash landing often is inevitable., Crash trucks are provided to prevent these crashes from becoming blazing death traps for pilot and crew. The Army Air Force has just ordered a number of special airplane crash trucks from Mack Trucks, Inc.

The new crash truck, big brother to a smaller Mack model that till now had been considered a super-crash truck, carries 1,000 gallons of water in which are about 50 gallons of foam solution, and has a separate engine driving a two-stage centrifugal pump capable of delivering better than 250 gallons of water per minute at 600 pounds pressure per square inch. At this pressure the water is blasted from specially constructed deluge guns mounted on the deck of the crash unit, enveloping rescue squad, crew, and airplane in a dense, penetrating water stream and fog.

After rescuing the crew under cover of the fog and beating down the main gasoline fire, the firemen use small, high-pressure hand lines to extinguish the small outlying fires. A flick of the wrist on quarter-turn valves changes the enveloping fog into a fire-smothering blanket of chemical foam. Hundreds of gallons of gasoline were burned in and around simulated airplane crashes in developing the pump and high-pressure water-fog nozzles and other unique accessories for the Mack unit. Mack's fire apparatus engineers worked with the Fire Prevention Section of the U. S. Corps of Engineers in developing the redoubtable crash unit.

Mack crash truck throws 250 GPM 20:1 water with foam at 600 pounds pressure.

PEERLESS PUMPS

PEERLESS PUMPS

HI-LIFT TYPE
Vertical Rotative Shaft Pump
Positive Displacement
10 to 60 Gallons Per Minute

TURBINE TYPE
(Deep Well)
15 to 30,000 Gallons Per Minute

HYDRO-FOIL TYPE
600 to 220,000 Gallons Per Minute

PEERLESS PUMP DIVISION
Food Machinery Corporation

FACTORIES:
301 W. Avenue 26...Los Angeles 31, California
San Jose 5 and Fresno 16, Calif...Canton 6, Ohio

Distributors in Principal Cities

Keep Up-to-Date on New Equipment

Please check over the following list of interesting catalogs obtainable free of charge and either write direct to the manufacturers for their literature, or, if you prefer, put a circle around the identifying numbers below to indicate the catalogs you want, mail this coupon to The American City Magazine, 470 Fourth Ave., New York, and we will see that the catalogs are sent to you without expense or obligation on your part. 9/43

773 774 775 776 777 778 779 780 781 782 783
784 785 786 787 788 789 790 791 792 793
794 795 796 797 798 799 800 801 802 803 804
805 806 807 808 809 810 811 812 813 814
815 816 817 818 819 820 821 822 823 824 825
826 827 828 829 830

Name ..... Position .....

Address .....

Traffic Lights Improved

773. Are traffic signals your responsibility? Then write to the Duro Test Corp., North Bergen, N. J., and ask for catalog No. 43C. This covers their regular and special purpose lamps for improving your system of traffic control. The manufacturer points to a long list of impressive service records.

Squeeze Water Up-Hill

774. Do you want some literature telling how to do the "impossible" in water pumping? Then write to the Peerless Pump Division of Food Machinery Corp., 301 West Ave. 26, Los Angeles 31, Calif., for data on this company's unconventional Hi-Lift Pump that literally squeezes water upward—something that many technical men thought could not be done. Pump capacities range from 500 to 3,500 gallons per hour.

Snow Plows

775. Once again it is time to be thinking of snow removal problems, and here is a book that will help. "Snow—Friend of the Enemy," offered by The Baker Mfg. Co., 503 Stanford Ave., Springfield, Ill., shows the complete line of snow removal equipment that this company produces. It gives details on what the equipment can do and offers suggestions on how to fit it to your municipal program.

Free Sample of Cleaning Material

776. Tilite, manufactured by the Pennsylvania Salt Mfg. Co., 1000 Widener Bldg., Philadelphia 7, Pa., is a tile cleaner useful in cleaning swimming pools, tiled floors, walls, and similar glazed areas. The company will send a free sample of this product for trial. Officials point out that it removes surface and imbedded dirt without leaving a dangerous slippery surface.

Water Meter Testing and Repairing

777. Water-works officials will find the booklet, "Economics of Water Meter Testing and Repairing," of permanent value. This interesting booklet contains a detailed discussion of meter repairs, important during these days when maintenance and repair are essential to the victory effort. Write to the Neptune Meter Co., 50 W. 50th St., New York 20, N. Y., for your copy.

Detachable Sheaves

778. Catalog V-1400-B7C, issued by Worthington Pump and Machinery Corp., Harrison, N. J., tells you the whole story on their detachable sheaves for driver and driven units. It describes the many features of this equipment, including a pictorial description of how to mount or remove these sheaves. You will find listed here dimensions of the stock "QD" hubs and sheaves.

Corrective Chemical Feeding

779. Booklet 101-B issued by the American Water Softener Co., Lehigh Ave. & Fourth St., Philadelphia, Pa., gives you complete information on The American Electro-Magnetic Proportioner used in the accurate and automatic application and proportioning of corrective chemicals such as lime, soda ash, aluminum sulphate, and other water-treating chemicals. It discusses the proportioning of chemicals for variable and constant flows of water, multi-feeding, non-clogging weir feed of chemicals and other characteristics and specification of the Proportioner.

Equipment for Photocopying

780. All municipal departments will find use for the A-Pe-Co photocopier. Literature published by the American Photocopy Equipment Co., 2849 N. Clark St., Dept. EB-9, Chicago 14, Ill., gives details on how this inexpensive machine will produce non-fading photo copies of all documents, records, vital statistics, blueprints, or any other details that need to be copied.

Water Pressure Relief Valve

781. Data will be furnished upon request by the Golden-Anderson Valve Specialty Co., Fulton Bldg., Pittsburgh, Pa., on their water pressure relief valve. This assists in keeping a desired line pressure by automatically opening at abnormal pressures, holding open at subnormal pressures, and closing when normal conditions exist. Write for specifications.

Mechanical Joints for Cast Iron Pipe

782. Are you thoroughly informed on all the uses of the Dresser mechanical joint and repair couplings? Get this information from the Dresser Mfg. Co., Bradford, Pa., and learn how it can be used to improve your water works.

Removal of Grease and Scum

783. Sewage-treatment officials will be interested in the new Dorrco Vacuator for use in sewage plants for removing grease or scum. The company points to the fact that the closed Vacuator tank eliminates much of the unpleasantness of this operation. The Dorr Co., 570 Lexington Ave., New York, will be glad to furnish you with information on this new grease and scum removal equipment.

Corrosion-Proof Pipe

784. All engineers and municipal officials who are interested in learning about the technical aspects of pipe corrosion prevention should obtain the booklet "Somastic Pipe Coating," published by the Industrial Engineering Co., 223rd St. at Alameda Blvd., P. O. Box 547, Wilmington, Calif. This comprehensive bulletin traces the history of this type of pipe protection, tells what it can do, how the protective layer can be applied, what it can stand structurally, and what can be done towards reconditioning old pipe.

Water Service Pipe and Fittings

785. Water-works officials interested in Asarco Type K Tube-Loy manufactured by the American Smelting and Refining Co., Lead Products Division, 120 Broadway, New York 5, N. Y., may secure a comprehensive bulletin from this company. It describes the pipe and fittings, lists proof of its dependability, gives essential features of the product and details of installation and technique of painting the pipe. You will also find here a table of list prices and specifications for Type K Tube-Loy and Superseal Flared Tube-Loy fittings.

Fire Fighting with Fog

786. In making your plans for present and post-war fire fighting, be sure to get literature from the John Bean Mfg. Co., 702 Hazel St., Lansing, Mich., on their equipment for fighting fires with "fog." A pressure of 600 lbs. at the nozzle and 750 to 800 lbs. at the pump, produces a high pressure "fog" which will put out fires with little or no water damage. This method absorbs 10 to 35 times as much heat as the same amount of low pressure water.

All-Purpose Marker

787. Meili-Blumberg Corp., Box A-9, New Holstein, Wis., will send you literature on their all-purpose marker that will fit a variety of needs for municipalities. It will do marking work on your streets, parking lanes, crosswalks, safety zones, playgrounds, airports, and also may be used for spraying paints on curbs, traffic signs, and traffic equipment. This equipment comes in two models either hand-propelled or self-propelled.

Emergency Sterilization

788. Be sure to ask for bulletin 1088, issued by Everson Manufacturing Co., 203 W. Huron St., Chicago, Ill. This describes the interesting SterElator that comes in either portable or wall models, to help solve your many problems in water sterilization. Its compactness and sturdiness makes it possible to use this sterilizing equipment wherever needed.

(Continued on page 21)

The War Will End in 194?

Plan NOW to use

UNIVERSAL CAST IRON PIPE

in your post-war water works system

NOW is the time to prepare your plans and specifications for water works improvements to start immediately at the close of the war. Be sure to include in those specifications Universal Cast Iron Pipe, the easy-to-lay bolted-joint pipe. Its advantages:

1. No calking or pouring of lead or lead substitutes. No gaskets used.
2. No bell holes to dig. Can be laid in a narrow trench. Cost of wide trenching is eliminated.
3. Can be laid with SPEED. Easier and cheaper to install because only two bolts need to be inserted in the lugs and tightened with a ratchet wrench (the only tool needed) and the completed joint is made in a few minutes. Experienced workmen are not needed.
4. Nothing to deteriorate; nothing to work loose; no leakage, no maintenance cost.
5. Flexibility: Universal Pipe is very flexible. It withstands expansion, contraction, unequal settlement, vibration and shock, and electrolysis. Many curves are laid with straight lengths and do not need special fittings.
6. Universal Pipe can be laid on rocky soil, under water and in sub-zero weather.

Specify UNIVERSAL PIPE for water mains and sewers.

Furnished in hot tar dipped, cement lined, and enameline lining.

Quick service to customers: by rail or water, from our foundries and warehouses located from coast to coast.

Our Universal Sales Department will be glad to furnish catalogs and any information that you may require to help you plan your post-war waterworks system using Universal Cast Iron Pipe.

THE CENTRAL FOUNDRY CO.

386 Fourth Avenue -:- New York

Catalogs Filled with Information

(Continued from page 19)

Efficient Street Lighting

789. Efficient street lighting throughout the country, and especially in dimout areas, plays an important part in the victory effort. Write Slater Electric & Mfg. Co., Brooklyn, N. Y., for bulletin 5M-643 on their incandescent street lighting lamps. This will show you how Slater specializes in the engineering and manufacture of their dependable lamps.

Sewer Cleaning Equipment

790. Catalog No. 42, issued by the Expanding Sewer Machine Co., Nappanee, Ind., is a complete description of this company's sewer cleaning equipment. This comprehensive booklet gives a detailed description of the expanding root cutter and sewer cleaner, and all the other accessories.

Right-Angle Pump Drive

791. City officials interested in sewage disposal, water supply, fire fighting, and flood control will be interested in catalog No. 12, issued by the Johnson Gear & Manufacturing Co., Ltd., Berkeley, Calif., on the Johnson Right-Angle Pump Drive. This is used as a connecting unit between the pump and power unit and finds a variety of uses.

How to Design Pipe Lines

792. Do you know all about the new principles of pipe line design recently approved by the American Standards Association—the significant "Law of Design?" Get a copy from the American Cast Iron Pipe Co., Birmingham 2, Ala., along with hints on how this company's pipe can be used to advantage when these new fundamentals are applied.

Sample Street Broom Fibres

793. Any municipal official interested in clean streets will appreciate the opportunity of obtaining the free samples of the Gerdau fibres used in street cleaning brooms. Contact the Otto Gerdau Co., 533 Canal St., New York City, for your sample.

Water Main Cleaning

794. Don't miss the bulletins furnished by The National Water Main Cleaning Co., 30 Church St., New York City, describing this system of rehabilitating your water-works system that does not force you to draw heavily on critical materials. It has received the endorsement of high-ranking WPB officials as one of the methods that should be investigated before considering a major water-works enlargement.

Control Equipment

795. Photoswitch, Inc., 77 Broadway, Cambridge 42, Mass., has just published sheet 1102, covering its electronic level controls. Here is a comprehensive listing of information on these instruments that will help operate your municipal services during days of manpower shortages.

Asphalt Maintenance Equipment

796. Street and airport maintenance men will be interested in the offer being made by Aeroil Burner Co., Inc., West New York, N. J. Their bulletin No. 262 describes how you may seal pavement joints without using new critical asphalt. It discusses the No. 99 Giant Burner and outlines the three steps to be followed in using it for this street maintenance work. The bulletin includes a free trial order blank and tells how this equipment, rated as "Hand Tools" under WPB regulations, may be purchased under any Maintenance and Repair order by simply endorsing the order with the proper paragraph.

Thread Tool Grinder

797. This little folder describes equipment that every municipal plant operator will want. The Clark Thread Tool Grinding Fixture enables you to make precision grinding of delicate little thread tools whether you are an old hand or a trainee. Write to the Robert H. Clark Co., 3424 West Sunset Boulevard, Los Angeles 26, Calif., for your copy of this folder.

Pump Data

798. Condensed catalog M, issued by the Aurora Pump Co., 66 Loucks St., Aurora, Ill., contains information of value to every municipal plant operator and engineer. It gives data on this company's complete line of centrifugal and turbine-type pumps and tells how it can be adopted to your particular plant.

Plastic Pipe

799. Don't fail to ask for the bulletin, "Saran Tubing," published by the Acadia Synthetic Products, Division of Western Felt Works, 4115 Ogden Ave., Chicago. Saran pipe is receiving recognition in the water-works field as more than just a substitute pipe. The manufacturer points out many superior characteristics such as its proof against corrosion, ease of fabrication and welding, and adaptability to the more conventional types of construction.

Street Washers, Outdoor Fountains

800. Here is a catalog that will give you the complete details on Murdock water service devices. It is well illustrated and contains prices and specifications. Particular attention is paid the Lock-Lid Street Washers, the Air-Lock outdoor drinking fountain, and the Outdoor Anti-Freezing Bubble Font. Write The Murdock Mfg. & Supply Co., 426 Plum Street, Cincinnati, Ohio, for catalog "L."

Eliminate Water Hammer

801. Several bulletins on the Smolensky Noiseless Flanged Check Valves are available from The Smolensky Valve Co., Inc., Cleveland, Ohio, containing technical, yet easily understood, material of real value to all municipal operators of water, sewage, and electric plants. Particularly significant is the description of the way these valves close before the water pressure reverses—thereby guaranteeing the elimination of water hammer.

Electrical Apparatus Renewal Parts Catalog

802. Your interest in keeping old electric apparatus operating in wartime will make you want the new 96 page catalog published by General Electric Co., Sec. 640, Schenectady, N. Y. This catalog gives a condensed listing of the renewal parts which you are likely to require most frequently for standard G-E apparatus—particularly motor and control parts.

Water and Sewage Treatment

803. Monsanto Chemical Co., Merrimac Division, Everett Station, Boston, Mass., has an interesting booklet entitled, "Ferrisul," covering Ferrisul as a coagulant in water and sewage treatment. Regarding water treatment it discusses the theory of coagulation with iron salts, removal of manganese, clarification of different types of water, removal of color, and the formation of floc at low temperatures. It also covers factors encountered in sewage treatment.

Well Screens and Pumps

804. The booklet, "Cook Wells and Well Equipment," is just what you need to keep informed on strainers for shallow wells. It describes the various types of wells and tells how these strainers can be used to best advantage in them. One section also is devoted to the uses and application of the Cook deep well turbine pump. Write to A. D. Cook, Inc., Lawrenceburg, Indiana, for booklet.

Hydrants, Gate Valves

805. Fire hydrants, gate valves, valve boxes, drilling machines, tapping sleeves, and tapping valves all are discussed in the comprehensive little bulletin, catalog A-200, issued by the Mueller Co., Chattanooga, Tenn. City officials concerned about fire protection and water supply will be particularly impressed by the Mueller-Columbian fire hydrant with its safety-flange feature.

Dams and Impounding Reservoirs

806. Do you want to know about a dam that can be put to work storing water for you even before construction is complete? Would you like examples of a special type of dam incorporating certain principles of economy that are applicable whether the project is large or small—a type of dam that has found acceptance throughout the entire world? Write to the Ambursen Engineering Corp., 295 Madison Ave., New York, and let them send you this literature so that you can study its application to your own water-works projects.

Main Line Meters

807. Keep well informed on main-line metering for your water supply by requesting bulletin No. 308, issued by R. W. Sparling, Box 3277 Terminal Annex, Los Angeles 54, Calif. This describes the Totalizer-Indicator-Recorder, type 216 meter.

Road Maintenance

808. Many good maintenance hints may be obtained from the "Barrett Tarvia Manual," published by The Barrett Division, Allied Chemical & Dye Corp., 40 Rector St., New York. The company states that you can receive detailed advice for your locality from the Barrett Tarvia field man in your district, and that there is a correct type of Tarvia for every need in road maintenance and repair.

How to Select Lubricants

809. Officials in charge of trucks, tractors, bulldozers, diesel engines and other equipment where lubricants are used may secure from The Texas Co., 135 E. 42nd St., New York City, information on the proper type of Texaco lubricant to get long life and effective use from their machinery.

(Continued on page 22)

V-day is sure to come — sooner, perhaps, than some of us dare to hope!

Will your City be ready to start the very next day on those long-needed improvements? *The time to get those plans ready is NOW!*

A PITOMETER DISTRIBUTION STUDY

is a preliminary step sure to result in a post-war WATER WORKS construction program that will be economical, effective and adequate to meet your City's post-war needs.

THE PITOMETER COMPANY
Water Distribution Engineers
52 Church Street New York, N. Y.

WHICH OF THE CATALOGS WOULD YOU LIKE?

(Continued from page 21)

Wartime Water Meters

810. The complete line of Pittsburgh-National Iron Case Cold Water Meters, including specifications, are covered in the new bulletin W-539. These meters, the manufacturer states, are built in strict accordance with WPB limitation orders and will handle any measurement needed. Address the Pittsburgh Equitable Meter Co., 400 North Lexington Ave., Pittsburgh, Pa., for your bulletin.

Revolutionary Type Water Softener

811. Permutit's new Bulletin 2384, "The Spiractor," describes a development that should revolutionize water-works design for the small plant. The Spiractor utilizes the cold lime-soda principle of water softening, yet it eliminates the great objection of expensive plants, excessive amounts of sludge that are hard to handle, and large plant size. It is built around the use of a catalyst and is based on a design developed in Europe. Write to The Permutit Co., Dept. G-3, 330 W. 42nd Street, New York City.

Fire Hydrants

812. An informative catalog is available from the Eddy Valve Co., Waterford, New York, describing the well engineered Eddy Fire Hydrants. It describes how a damaged valve can be replaced in a few minutes at slight expense, and gives details on their frost-proof features.

Do You Know About This Aggregate Spreader?

813. The Flink Implement Co., Streator, Ill., will furnish you literature on the self-feed spreader made by this company, and which is such a boon to municipalities during days of manpower shortages. Designed to handle either sand or rock chips used in the inverted penetration type of bituminous street construction, it also finds use during the winter in scattering abrasives over icy streets. The spreader can be operated by the driver of the truck, fits on standard dump bodies, and can disperse wet or dry material.

Plan Your Anti-Freeze Protection Now

814. The wise municipal official will lay his plans for cold weather protection of city automotive equipment now by investigating and becoming thoroughly posted on dependable anti-freeze solution. One handy reference is the "Eveready Manual of Cooling System Service" prepared by the National Carbon Co., Inc., describing the nationally known Prestone anti-freeze. This bulletin gives details on anti-freeze installation, cooling system service problems, and tells how to prevent corrosion, and how to clean and flush radiators. When writing for your copy, address the National Carbon Co., Inc., 30 E. 42nd St., New York City.

Selecting and Installing Underground Cable

815. The Hazard Insulated Wire Works Division of The Okonite Co., Wilkes-Barre, Pa., will send you detailed information on how to select the right underground cable as well as how to install it. The company also states that its engineers are ready to be consulted about any problem covering the production, installation, or maintenance of electric wire and cable.

Water Works Pumps

816. Morris Machine Works, Baldwinsville, N. Y., will furnish you with data on their double-suction, horizontally split pumps. These are built in single and multiple stages for all capacities, and are noted for high efficiency and dependable operation. Write this company for their literature.

Diesel Engine that Burns Either Gas or Fuel Oil

817. Here is a type of diesel engine that should interest every city official. This recently developed Nordberg diesel will burn either gas or fuel oil and can be quickly converted without a change of major engine parts. It will play an important part in the generation of power for municipal electric plants and water works in areas where natural gas may be available. Write to the Nordberg Mfg. Co., Milwaukee, Wis., for bulletin 106.

Planned Municipal Insurance

818. Do you include a thorough analysis of your municipal properties from the insurance standpoint as an important part of your city's maintenance program? The engineering department of The Home Fleet of Insurance Companies, 59 Maiden Lane, New York City, furnishes advice on this problem without obligating the municipality.

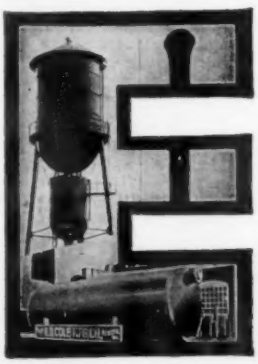
Turbine-Driven Pumps

819. "Cleveland Pioneered" is a booklet published by the De Laval Steam Turbine Co., Trenton, N. J., on the three Cleveland pumping stations equipped with geared turbine-driven centrifugal pumps. Here is a chance to get a clear picture of the fine job these pumps do for pumping stations. The booklet also includes a chart showing the duties to be expected from geared turbine-driven pumping units of various capacities and adapted to use steam at modern pressures and temperatures.

(Continued on page 24)

Tank Builders For Over 80 Years!

Tanks, Towers, Kettles, Kiers, Vats, Vessels, Bins, Boilers, Stacks, Standpipes and other fabricated platework from your specifications or ours.

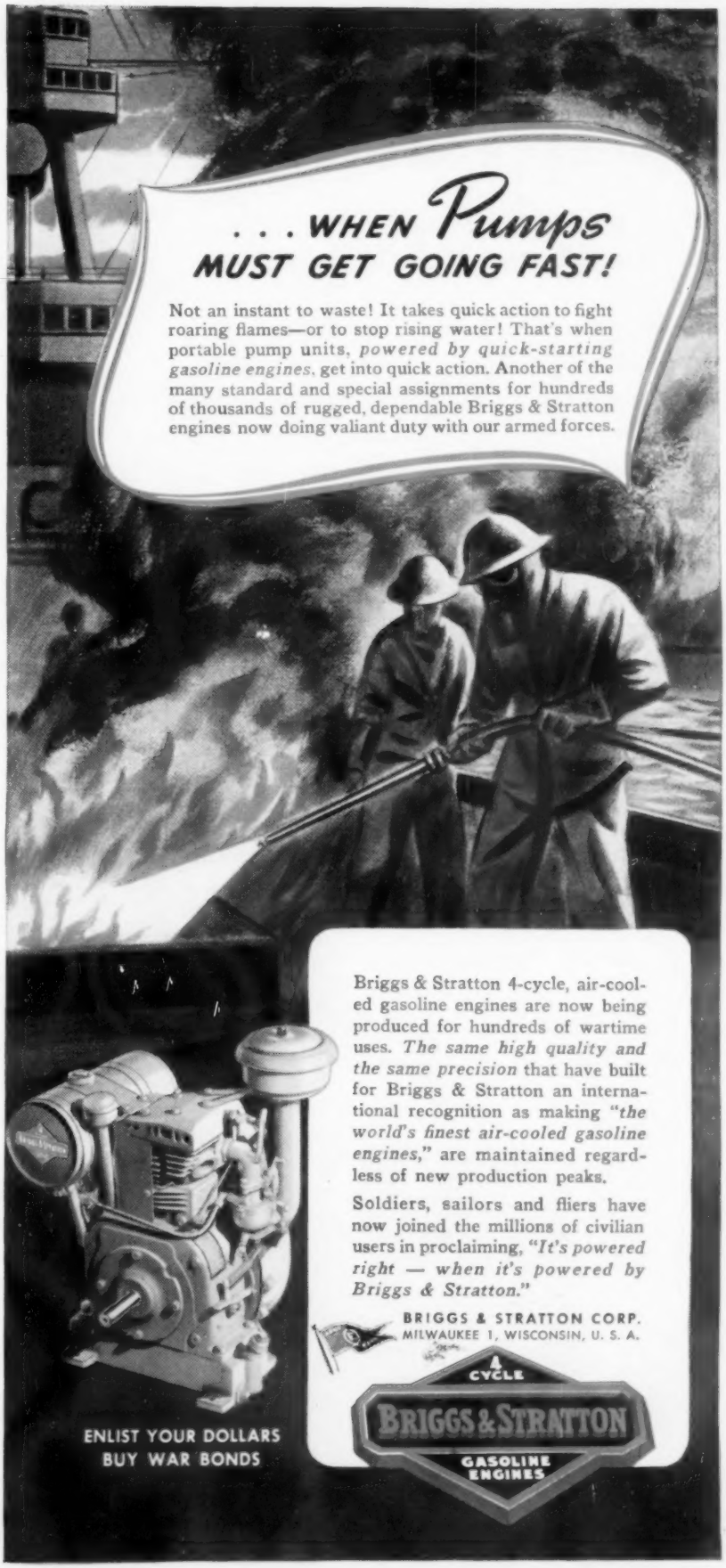


Write for "Tank Talk" — 6-A, or let us figure on your requirements.

R.D. COLE MFG. CO.

Established in 1854

NEWNAN · · · GEORGIA


. . . WHEN Pumps MUST GET GOING FAST!
Not an instant to waste! It takes quick action to fight roaring flames—or to stop rising water! That's when portable pump units, *powered by quick-starting gasoline engines*, get into quick action. Another of the many standard and special assignments for hundreds of thousands of rugged, dependable Briggs & Stratton engines now doing valiant duty with our armed forces.
Briggs & Stratton 4-cycle, air-cooled gasoline engines are now being produced for hundreds of wartime uses. *The same high quality and the same precision* that have built for Briggs & Stratton an international recognition as making *"the world's finest air-cooled gasoline engines,"* are maintained regardless of new production peaks.
Soldiers, sailors and fliers have now joined the millions of civilian users in proclaiming, *"It's powered right — when it's powered by Briggs & Stratton."*
BRIGGS & STRATTON CORP.
MILWAUKEE 1, WISCONSIN, U. S. A.
4 CYCLE
BRIGGS & STRATTON
GASOLINE ENGINES
ENLIST YOUR DOLLARS
BUY WAR BONDS

THE CHEMICAL BASIS FOR IRON-CASE WATER METERS

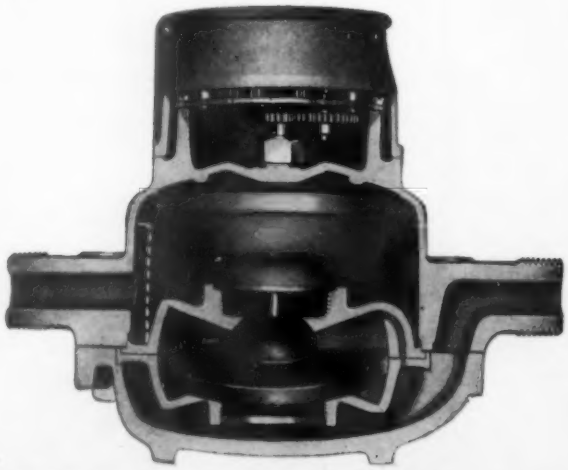
In water containing bicarbonate hardness, a water meter having cast iron casing with bronze works may give longer life than an all-bronze meter. This is partly because iron ranks ahead of copper in the electromotive force series of chemical elements, so deposits of mineral salts and corrosion are attracted harmlessly toward the iron. The bronze works are thus left relatively free from corrosion or scale for many extra years.

The reaction of such water also aids in preserving the hot-dip-galvanizing on the Niagara Meter iron casing. Niagara design does not permit bare iron to be exposed to the water.

When metering water that is relatively soft, or has low pH, iron case meters may need casings changed to bronze after the war. This can be done so simply that there is no need to postpone meter installations on this account.

BUFFALO METER COMPANY

2902 Main St. **Buffalo, N. Y.**



WHICH OF THE CATALOGS WOULD YOU LIKE?

(Continued from page 22)

Sewage Recirculation Process

820. Sewage works operators will be interested in Bulletin 2415-A issued by Infilco, Inc., 325 W. 25th Pl., Chicago, Ill., on their Accelo-Filter. This booklet contains the details of this method of securing improved sewage including a description of the process listing and discussion of the essential parts and specifications.

Well Water Systems

821. Water works officials making plans for post-war construction will be interested in securing from Layne and Bowler, Inc., Memphis 8, Tenn., their bulletin "Layne Well Water Systems." This booklet gives complete details and illustrations on their gravel wall wells, underreamed gravel wells, deep gravel wall wells, and various other features of Layne installations. Also included is a chart on comparative well production and details of the various Layne pumps showing typical installations.

Joints for Cast Iron Water Mains

822. You can get literature from The Leadite Co., Girard Trust Co. Bldg., Philadelphia, Pa., on the use of Leadite for making joints in cast iron water mains. This non-lead material, whose ability has been proven by years of successful service, can be melted and poured, requiring no caulking, no large bell-holes to dig, and producing real savings in water main construction.

Valves and Hydrants

823. Now that the importance of valves and hydrants in wartime water supply has been so thoroughly emphasized, city officials will appreciate receiving technical data furnished by the M & H Valve & Fittings Co., Anniston, Ala., on this subject. Available literature in particular describes the M & H Fire Hydrant. Its ease of lubrication, low maintenance cost, and low friction loss will appeal to the well-informed municipal official.

Accounting Machine Operation

824. Are you using your Burroughs Accounting Machines as efficiently as possible? Have you taken any added precautions regarding their maintenance? If you are not absolutely sure that the answer to both these questions is "yes," you should contact the Burroughs Adding Machine Co., Detroit, Mich., at once. This organization will furnish practical help that will improve the operations of these machines, thereby increase the efficiency of your office, and lengthen the life of these important hard-to-obtain machines.

Centrifugal Pumps

825. Carver Pump Co., Muscatine, Iowa, has a new bulletin on their full line of centrifugal pumps. It incorporates illustrations and data on the features of these pumps, specifications and performance data for each model, engineering data including hints on the selection of the proper size of pumps, and various tables.

Meter Box Covers

826. A well prepared catalog is available from The Ford Meter Box Co., Wabash, Ind., describing the rugged Ford Monitor Covers. These are useful in covering the 1½ and 2-inch meters or two or more smaller meters. All have the Lifter Worm Lock with forged Everdur bolts.

Valve Insertions Under Pressure

827. You can obtain an informative catalog from The A. P. Smith Mfg. Co., East Orange, N. J., describing the Smith Valve Inserting Machine that will allow you to place valves in service while the mains are at full pressure. The catalog also describes other Smith products such as valves and hydrants, tapping sleeves and valves, hat flanges and water meters.

Cast Iron Pipe Design

828. Get the latest information on pipe line design by writing for the booklet "Manual for the Computation of Strength and Thickness of Cast Iron Pipe," published recently by The Cast Iron Pipe Research Assn., 1013 Peoples Gas Bldg., Chicago, Ill. This is an important booklet and should be a part of the library of every operator, engineer, or city official concerned with water works or sewerage.

Rock Crusher Bulletin

829. A complete line of roller bearing jaw crushers offered by The Austin-Western Road Machinery Co., Aurora, Ill., is presented in a new eight page bulletin that has just been released. All features of construction and operation are clearly illustrated and completely explained. It also includes large cross sectional views of complete crushers, showing bearings and related parts, and gives a comprehensive conception of detailed design and performance. When writing, ask for Bulletin 1960.

Sand-Cast Pipe and Precaulked Fittings

830. Folder WJ-42 gives you an insight into the exacting workmanship that is used in the manufacture of McWane Cast Iron pipe. It further clears any questions you might have had on the "precaulked" feature of this company's cast iron pipe, in which permanent redwood wedges supplant jute that will, in time, disappear. The folder also lists both weights and sizes of the pipe and the fittings generally used in municipal work. Details on threaded cast iron pipe also are discussed. Write to McWane Cast Iron Pipe Co., Birmingham, Ala.

Vol. LVIII, No. 9 The American City September, 1943

Tacoma Looks Forward

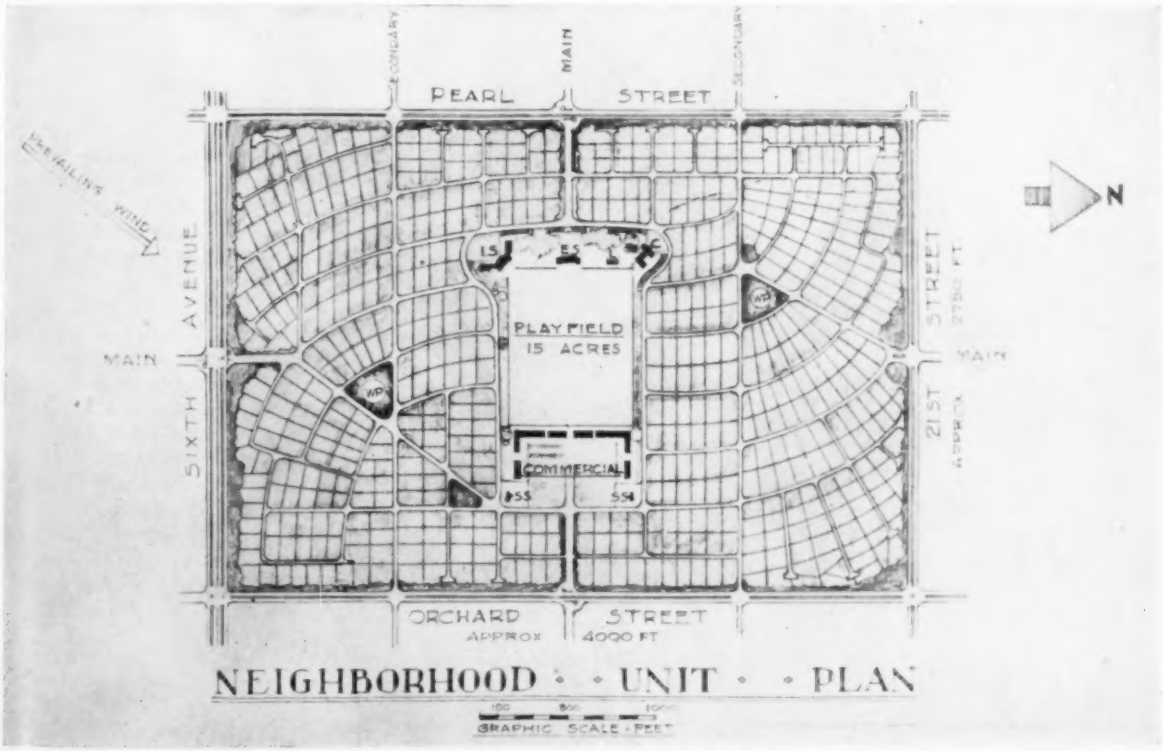
Mayor's Research Committee on Urban Problems Plans the City of the Future

By MARVIN R. SCHAFER, Ph.D.
Professor of Sociology
College of Puget Sound
Tacoma, Wash.

TWO years ago the war, with its demand for increased industrial production resulting in an increased metropolitan population, forced thinking persons to wonder how the city could take it. Major Harry P. Cain, U. S. Army, then Mayor and now Mayor in absentia, wondered too. When he came to office he found no concrete plans, no specific policy, and no rules to follow as a guide in the administration of a city of more than 100,000 during a most dynamic and critical period.

Mayor Cain claimed the city needed to know about itself. It should know about its population and population growth, its fire equipment, its street traffic, its schools, its highways, the library, its industries, and its labor. Questions he asked in these fields were left unanswered, but the Mayor refused to permit silence. There was a college in the city. It had trained investigators on its staff. Many of these men had studied various phases of the city's life. He went to this group for both answers and advice. Out of this conference grew the Mayor's Research Committee on Urban Problems, a committee of fourteen men—twelve of them college professors professionally interested in the field. Dr. Paul R. Fossum, a guest lecturer in Economics, was appointed Chairman. These men set to work to survey the city's problems.

The Mayor wanted to know if the city would grow and how large it would be—when. This threw the field wide open. The Committee found that the war might not be the only factor generating expansion. Public power from the Columbia River—Grand Coulee with its more than 9,000,000,000 kwh a year—was a factor. The Grand Coulee irrigation project, with its 1,500,000 acres of exceedingly fertile soil, was another. The revival of our oriental trade in the post-war period another. And still another, the increasing importance of forest products and northwest metals. Power in vast volume, 41,000,000,000 kwh per annum, from the energized and canalized Columbia River, with 40,000,000,000 kwh more from other streams; food in volume great enough to feed more than a million new mouths; tremendous advances in forest products and elec-



Insulated neighborhood units are a special feature of the Tacoma plan.

tro-metallurgical processing,— led the Committee to propose a plan not only to take care of what was to come but to insure that Tacoma obtained its full share of the prosperity which would certainly be generated by this enormous development.

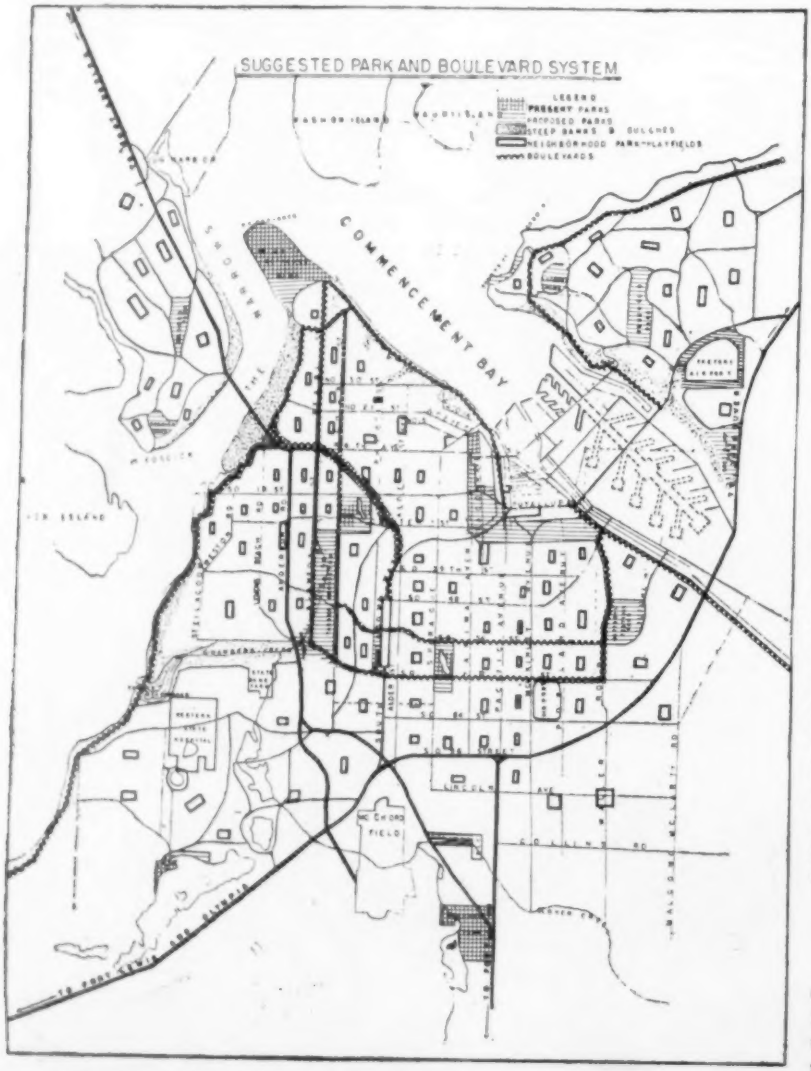
Relating Local Planning to Regional Opportunities

The work of the Mayor's Research Committee on Urban Problems under the direction of Dr. Fossum was not undertaken to provide a mere physical plan for the city itself. The Chairman emphasized the fact that no city was any greater than the resources to be found in its environment: that to benefit from those resources a city must live up to its opportunities. What were those opportunities? An economic study and analysis was necessary. The future city must be fed at reasonable cost. The area west of the Cascades, the Puget Sound Country, was a deficit food area. Seventy-eight per cent of the food consumed there was imported, chiefly from the irrigated areas east of the Cascades. The state highways, though excellent, were inefficient for this tremendous job; the transport costs were terrific. To aid the agriculture of the east side and the working men in the industrialized west side of the Cascades, new roads must be built.

The Committee studied the topography of the area. A 5-mile vehicular tunnel through the Cascades would reduce the climb from 3,000 to 2,000 feet and the distance to the irrigated areas from 40 to 60 miles. They advised this tunnel to get food to the workers. They advocated an independent truck highway from Portland to Seattle. A system of roads for the entire area was devised. A canal from the Columbia River to Puget Sound was urged. They suggested that it first be a barge canal and later be converted into a sea-level ship canal which would not only permit shipping to avoid the stormy, rocky coast but also provide a military link between the Columbia River, Willapa Bay, Gray's Harbor, and Puget Sound of immense strategic value for our fleet.

With roads, tunnels, and a canal connecting the tidewater cities with both the food and the ore of the area, the immense potential hydro-electric power of this region can be utilized on what is believed in Tacoma to be the most ideal sites and in the most ideal industrial climate in the world—a region where even temperature summer and winter, ample resources and railroad passage to the eastern states over the lowest passes in the Rockies and Cascades form a combination to be found nowhere else.

Since Tacoma lies at the intersection of the east-west and north-south highways of this region, the Committee points out that the city should, under proper guidance and planning, be well able to attract its share of the development to come.



The Tacoma plan provides for many neighborhood parks and playfields.

The City of the Future—What Form Shall It Take?

What form should the future Tacoma take? The city possessed ample water for the 125 per cent increase in its metropolitan population that the Columbia River studies indicated might come. There was plenty of land for industry, commerce, and residence. A modern sewerage system could be easily and economically installed. Outstanding in the city's assets are its location and topography. The industrial district lies on tidewater and is ideal for development. Here the Puyallup River has silted in an area two miles wide and ten miles long. The Committee suggests this area be provided with 22 miles of tidewater locations through the extension of a ship canal 800 feet wide as the demand arises for new industrial sites.

The central business area is to have its efficiency increased by providing boulevards running in an outer ring to feed into the commercial district rather than having the main volume of traffic running down the center. The twilight area is to be replaced with a green belt with a zoned multiple-dwelling area just beyond.

Insulated Neighborhood Units

By far the most interesting section of the Committee's report deals with the residential area. It is proposed that this area be divided into 102 neighborhood units insulated from each other by arterials which form

both a system of direct communication with the central commercial area and also a system of belt lines about the city to provide easy egress and ingress from the industrial areas.

The neighborhood units suggested will provide holdings of varying size for various family demands. The size of the holding will determine the density of the unit since these units are approximately equal in area, increasing somewhat in size as you move away from the city center. Each unit planned is to have a 20-40 acre park-playfield near its center. On one side of this park-playfield the business area is to be located and zoned. Separated from the business area by a green belt will be the community center, an area containing an elementary school, a church, and other community facilities.

Since the dwelling-house density of the present city is not heavy, the Committee has suggested that the arterial system for this section be so developed that the present neighborhood and sub-city shopping areas be preserved. The over-all plan for an arterial and belt-line system has, therefore, made use of the borderline of the shopping areas for its arterial system.

Free Pedestrian Movement

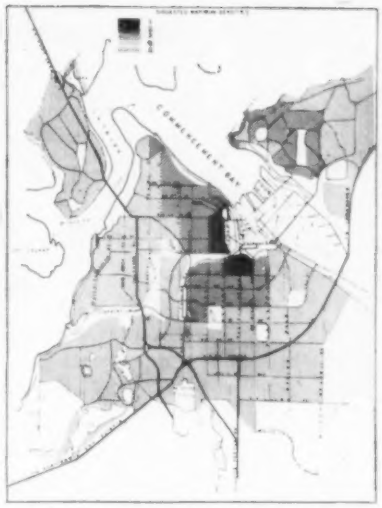
The two principal characteristics of the Tacoma plan are the Committee's emphasis upon the outside arterial and free pedestrian movement. The neighborhood units are bounded by high-speed automobile arterials; and the sub-city shopping centers and the city center itself are to be provided with arterials running outside and around these sections rather than through the main streets. Automobile parking and automobile traffic on business streets is to be cut to the very necessary minimum. Automobile parking is to be provided conveniently outside these districts.

In all these areas it is suggested that pedestrian movement be entirely unhampered by automobile traffic. The Committee proposes that especially the city's central retail shopping district prohibit all automobile traffic and that the pedestrian be permitted to use the streets for crossing at any point in the pedestrian area, thus encouraging shopping rather than reducing the shopper's time by forcing her to walk around the block and wait for traffic lights to cross a street. The Committee feels that the pedestrian goes to the stores to shop and, therefore, that purpose should be constantly borne in mind for all city shopping area plans.

In the neighborhood center, too, it is the pedestrian who is king. Streets are suggested to be laid out along the contours. Automobile traffic within the neighborhood is to be discouraged. The shopping district, cultural centers, and playfield-park are all planned to be within easy walking distance of the residence. Outside, and forming a ring around the neighborhood, the arterial, provided with frequent pedestrian underpasses, is planned to provide maximum convenience for the automobile. Long, wide arterials that are constructed for speed and safety to tie the industrial areas, the city center and the residences together. Belt lines constructed as boulevards are proposed not only for moving the traffic to and from work but also to provide connecting links between the various large recreational parks.

Much more is contained in the 385-page report and plan with its 45 maps and 29 tables. Suffice it to say that the study is the most complete ever made for this city and perhaps for any city of similar size.

Credit is due to the National Resources Planning Board for early encouragement, suggestions, and some of the maps.



SUGGESTED MAXIMUM DENSITIES

Areas	*Persons Per Square Mile*	*Dwelling Units Per Gross Acre*
1	20,000-25,000	8-12*
2	10,000-20,000	4- 8
3	5,000-10,000	2- 4
4	2,500- 5,000	1- 2
5	Under 2,500	Less than 1

** Apartment houses will be permitted in the 20,000-25,000 persons per square mile district, with approximately 12 to 16 dwelling units per gross acre.*

Burbank's New City Hall

PICTURED here is the new City Hall of Burbank, Calif. The building was completed Dec. 30, 1942 at a total cost of $409,000, which included $24,000 for the site of the building, and $75,000 for furniture. Aside from Federal participation in the project of $10,000 for common labor and $1,100 for material, the financing was by current municipal revenues over a period of six years.

The building, designed by Allen & Lutzi, who also served as consulting architects, was built on ground especially purchased by the purpose. Replacing an outgrown City Hall the new structure contains 40,000 square feet of floor space.

Burbank is a major cog in the nation's war effort, Lockheed-Vega and other war plants being located in the city. PAUL VANDERVOORT, II.

New City Hall, Burbank, Calif.

Sewerage in San Diego for National Defense

By Harold Keen

The important new sewage-treatment plant recently put into operation in San Diego, capable of serving 425,000 people, contributes more to the successful prosecution of the war than merely to protect public health. It removes corrosive sulphuric and hydrochloric acids that had been causing serious damage to destroyers based here. This is the first municipal plant in the United States to use resourceful Vacuators for the removal of grease and suspended solids. It also incorporates such significant features as sludge elutriation, filtering with the ferric chloride produced by the Scott-Darcy process, and flash-drying for fertilizer-production.

FOR many years San Diego, Calif., was confronted with an appalling sewerage problem. Raw sewage of a rapidly growing civilian population and of important naval establishments was discharged into San Diego Bay through nine outfalls, resulting not only in an unhealthful pollution of harbor waters and obnoxious odors along the shoreline but actual corrosion of warships and deterioration of their equipment.

By the coordinated effort of the City of San Diego, the Works Progress Administration, the Federal Works Agency, and the U. S. Navy, a $3,832,560 sewerage system, including a 11½-mile interceptor line skirting the bay, a giant treatment plant and new outfalls, has been completed and is today in operation as an essential health-safeguarding facility in what has often been referred to as the nation's leading "war boom town."

Eliminate Bottlenecks

The foresight of persistent San Diego officials, who aggressively sought Federal assistance long before the days of priorities problems, is responsible for the realization of the project. Materials now extremely difficult to obtain were acquired prior to the period of intensive war construction activity. The major bottleneck was inability to obtain sufficient skilled labor, resulting in a slowing down of the work but in only an infinitesimal increase in cost over original estimates by the City Engineer's office.

As far back as 1938, the City Council was soliciting Federal aid for a sewerage system. The Secretary of the Navy assured the Council in February of that year that he would ask Congress for funds to cover treatment of sewage from naval activities, either by individual treatment plants or participation in construction of a central municipal plant. San Diego had yet to reach a civilian population of 200,000, which figure has almost doubled in three years, and contained only 12,000 service men at shore establishments—a fraction of today's military personnel.

Evidence to Navy Secretary

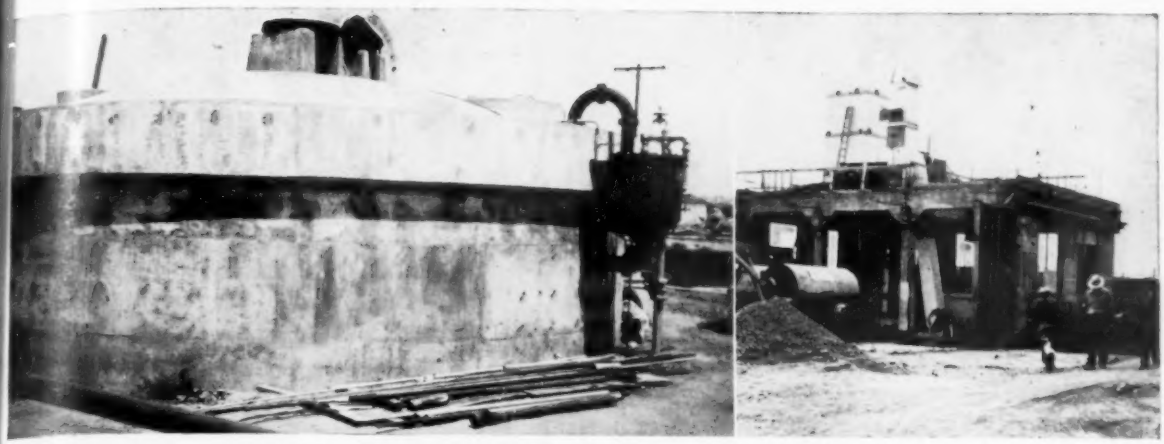
An impressive array of evidence pointing to the alarming condition resulting from outpouring of raw sewage into the bay was marshalled in April 1940, on occasion of a visit to San Diego by Charles Edison, then Secretary of the Navy. City officials prepared a brochure, containing statements from all ranking navy authorities in the area describing the need for an improved sewerage system. Secretary Edison showed immediate interest in the problem, and from that day the plans being prepared by Byrl D. Phelps assistant city engineer, began to take material form with increasing speed.

Rear Admiral J. R. Defrees, 11th Naval District Commandant at that time, explained to Mr. Edison that considerable heavy solids were constantly in evidence in the raw sewage, and that no live streams entered San Diego Bay to help clear its waters of these solids.

Damaged Warships

The situation was most distressing at the Destroyer Base, at the bayshore's southern city limits, in the vicinity of which the sewage disposal plant has been established. Capt. Byron McCandless, commandant, complained to Mr. Edison that hydrogen sulphide of the effluent coming in contact with salt water at the main outfall near the Base generated sulphuric and hydrochloric acids, resulting in serious corrosion of warships at their flotation lines, necessitating welding of doubling plates when the vessels were docked.

A view of the Main Pump building showing the Scott-Darcy tanks in the foreground. The chlorination track also is clearly visible at the side of the building.



Left: A close-up of one of the two Vacuators, the newest thing in sewage treatment.
Right: A view of the Raymond Flash Dryer and the Oliver Filters during installation.

"On the recent recommissioning of 38 destroyers (which eventually made their way to England in the lend-lease of 50 such vessels), it was found necessary to renew the wood in the strut and stern bearings of many of them," Capt. McCandless said. "This condition was traced directly to the agents released by the sewage."

Corrosion above Water-Line

Aggravating the Destroyer Base's maintenance problems further was the fact that gases given off, chiefly at slack water, promoted deterioration of many materials exposed above the water line, such as guns, mounts, searchlights, and torpedo tubes.

"A division of destroyers assigned to gunnery school work and berthed in this vicinity found the ships could not be operated at any but low speed," Capt. McCandless declared. "On docking, the condensors and injectors were found filled with organisms undoubtedly originating from sewage."

With all these factors rendering imperative immediate construction of a sewage disposal plant, work was started in February 1941 and was pressed forward despite abandonment of WPA by the government before completion of the job, and despite many knotty mechanical troubles.

Interceptor Sewer

The interceptor sewer extends in a semi-circle around San Diego's picturesque bay, from the military reservation of Ft. Rosecrans on Pt. Loma to the southeasterly city limits near the Destroyer Base. The pipe ranges in size from 18-inch at Pt. Loma to 60-inch at the sewage disposal plant, end of the 11½ mile line. For 4.14 miles, starting at Ft. Rosecrans, vitrified clay pipe of 18- to 30-inch size was laid. Then followed 45-inch reinforced concrete pipe for 2.057 miles, 51-inch reinforced concrete pipe for 1.393 miles, and 60-inch reinforced concrete pipe for the final 3.733 miles.

Pumping Stations

Three lift pump stations are located at intervals along the line to lift the sewage to levels from which gravity flows may be resumed. Automatic control is provided for the pumps to keep an even flow of sewage in the sumps.

The upper two-thirds of all reinforced concrete pipe, except the 36-inch, has been lined with vitrified clay liner plates set in Tegul-Ampco, acid-proof jointing compound. This will protect the pipe from the corrosive action of the sewage gas. The designers do not expect the liquid sewage to hurt the concrete.

City officials designed the interceptor sewer line to accommodate a population of 700,000, about 300,000 more than at present. The sewage-treatment plant will care for a community of approximately 425,000 and had to be increased in design size twice during construction to keep pace with San Deigo's soaring population.

Treatment Plant

The design of the treatment process is distinguished by many resourceful and progressive features. Based fundamentally on the separate sludge digestion method, this is the first municipal plant in America to use the revolutionary Vacuator to assist in the removal of grease and finely suspended solids. It also adopted the use of elutriation tanks to condition the sludge prior to filtering, and treats the sludge during the filtering operation with ferric chloride produced by the Scott-Darcy process. Post-chlorination insures that the effluent will be stable and relatively free from odor.

Flow Schedule

The sewage enters the plant about 20 feet below the ground, and receives a pretreatment of chlorine from Wallace & Tiernan feeders. From there it runs through a bar screen which removes large articles such as lumber and bulky trash. It then is directed into two Chicago Comminutors, with a 20 million gallon per day capacity each. Here any oversize sewage particles are ground up making them more easily handled in the balance of the process.

Grit Removal

The next step involves grit removal, using Dorr Detritor equipment. Sand, broken pieces of glass, and other heavy particles are separated from the sewage and automatically hoisted out of the plant.

The sewage then enters a tile-lined wet wall, from which Fairbanks-Morse pumps ranging in capacity from 1,000 to 10,000 gallons per minute lift the liquid into aeration tanks, where enough air is added to cause most of the light particles and grease to float. Two hundred cubic feet of air per minute are introduced through a perforated pipe and vertical propeller type Dorr turbo-mixer.

Vacuators Remove Grease, Suspended Solids

From this point, the sewage runs into two Dorrco Vacuators — tanks in which a 10-foot vacuum is maintained to bring light floating particles, scum, and suspended solids to the surface, from which they are removed into a trough and taken directly to digestion tanks by a Chicago Duplex plunger sludge pump. Around one third of the settleable solids, floating particles, and grease are removed in these tanks.

Uses Clariflocculators

The effluent now flows to one of three Dorrco Clariflocculators, the center of which acts as a flocculator, stirring up the fine particles, causing them to unite and drop to the bottom of the tank. The outer portion of the tank is a clarifier and retains the sewage from one to two hours, during which period 85 to 90 per cent of all settleable solids will have dropped to the bottom of the tank.

Resultant solids are gradually raked to the center of the tank and pumped to the digestion system, while the remaining effluent goes directly into San Diego Bay through an outfall laid on the bay bottom.

Digestion and Elutriation

The digestion system consists of three large tanks, one of which has a buoyant gas cover and will be used for gas storage. The capacity of each tank, with 75-foot diameter and 33-foot concrete sidewall depth, is 145,600 cubic feet. The gas is used to heat the water system in the digestion tanks and to speed up sludge digestion as well as to dry the sludge by the Raymond flash drying process.

After 30 to 60 days in the digestion tanks, the sludge is washed in two elutriation tanks 20 feet in diameter and 10 feet deep. Here the sludge is washed with clarified effluent from the Clariflocculators.

Pumped to two Oliver vacuum filters where the water is removed, the sludge then goes on a conveyor belt to be dried by the Raymond flash dryer system in which 1,200 degrees of heat is applied, killing all bacteria, disintegrating the material into small particles, and removing the remaining moisture.

The final product is cured and reduced to small black pellets ready for sacking in a hopper and to be sold commercially as fertilizer.

12 Tons Fertilizer Daily

Mr. Phelps estimates that at least 12 tons of fertilizer should be produced daily by the disposal plant when it is operating at capacity. At the rate of $20 per ton, in what is believed a ready market, the plant will have an anticipated revenue of about $70,000 annually, or 60 per cent of the operating cost.

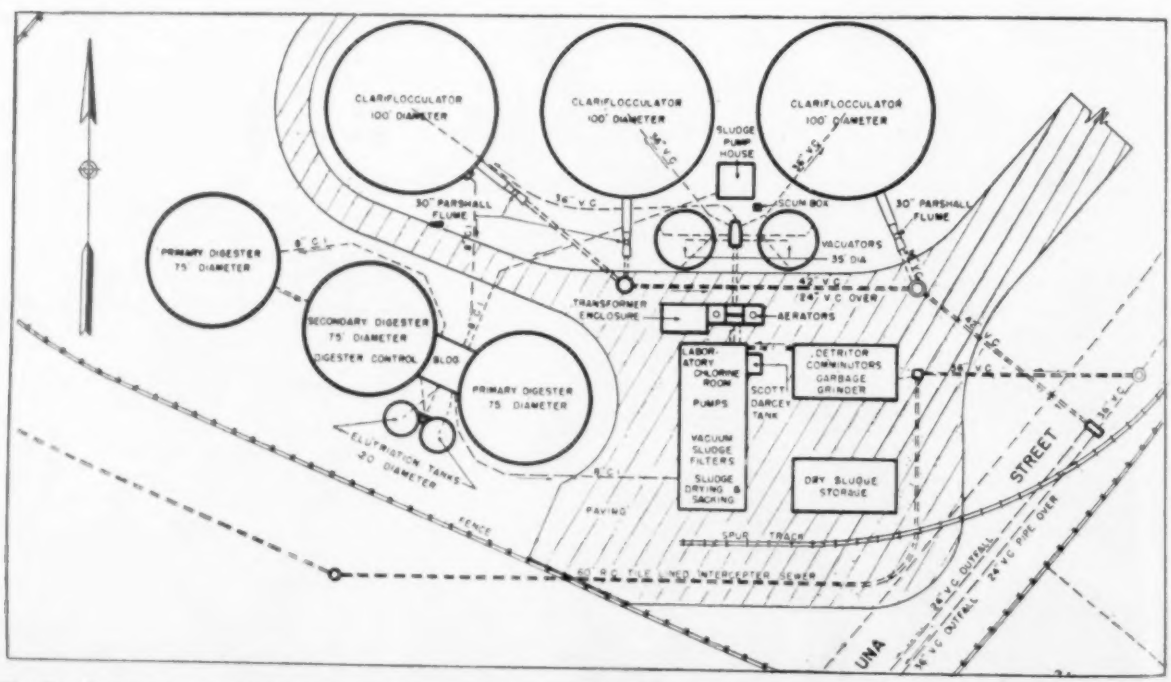
Although the Navy had offered, in the pre-war planning stage of the project, to pay 10 per cent of the cost as its pro rata share, actually it met a far greater percentage of the ultimate bill. Of the total $3,832,560 cost, the Navy contributed $686,818—all spent on 4½ miles of the interceptor line, built in public contracts let by the 11th Naval District. The sewer line was made possible by a patchwork of financing. In addition to the Navy's backing, the City of San Diego obtained funds from the Federal Works Agency, in a force account for 4 miles of the line, and money for the remaining 3 miles came from WPA.

Supervision and Management

The sewage-treatment plant is in charge of E. V. Quartly, San Diego civil engineer, who supervised its construction by WPA. The plans were drawn in the City Engineer's office, from a design formulated by Assistant City Engineer Phelps. Harvey C. Cole, structural engineer on the project, remains as its sanitary engineer. R. C. Stockman, who assisted in the design of the complex hydraulics system, entered the armed forces as the plant neared completion.

Electrical installations were fabricated primarily in the city's own shop under direction of P. V. Monsees. Their design and installation was supervised by Frank Hauser, of the city Electrical Department. William Darby, general foreman in the city Public Works Department, and H. O. Carroll, Public Works Inspector, were Quartly's "right-hand men" during construction.

At a civic banquet commemorating completion of the system, Mayor Harley E. Knox stated, "The elimination of pollution of our fine harbor is not the only thing of which we can be proud. The fact that San Diego can take her place with other cities with a modern sewage-treatment plant is a great accomplishment in itself and will add to the safety of living in this community, increasing the healthful and enjoyable use of our harbor for recreational purposes."



The line drawing of San Diego's new sewage-treatment plant. Notice the 35-foot Vacuators installed near the Clariflocculator and also the elutriation tanks placed near the digesters.

UNITED STATES HOUSING AUTHORITY PHOTOGRAPH

EVENING SUN PHOTOGRAPH

Former Slums Which No Longer Menace Baltimore.

City Health Department Aids Slum Clearance

Four Years' Progress, Capped by an Important Court Decision

By HUNTINGTON WILLIAMS, M. D.
Commissioner of Health, Baltimore, Md.

DURING the last four years the City Health Department in this community of a little less than a million persons has made some active efforts to wipe out what may be referred to as the city's "rock bottom slums." As approaches to a more substantial attack on the problem during the years that lie ahead, it is felt that a brief summary of the experience may prove of some interest.

First Venture

With the construction of an early City Housing Authority project in Baltimore in 1939, it appeared that one of the worst slum spots in the city would remain just across the street from the new development. The City Health Department, with some slight trepidation, responded to the appeal from the Housing Authority and, with the assistance of the City Buildings Engineer, succeeded under ordinance in having the slum demolished. It was a small cluster of one-story brick dwellings in the general vicinity of the city jail, with a very narrow and dark passage for the inner entrance and with no inside toilets nor even any inside running water. These sanitary facilities in rudiment were in the front areaway. The brick walls were structurally unsafe and the dwellings were entirely unfit for human habitation, although they were rented and occupied at the time of the appeal.

The Health Department had felt that this first venture was somewhat risky and frankly expected the heavens to fall, but was astounded that the better element in the real estate group was not openly disturbed. Indeed, a little later the community and the Health Department itself were asking the same question, namely, "Why hadn't the Health Department become interested in this field of service long ago?"

Welfare Department and Newspapers Cooperate

After some months the Health Department found that it had superb support from the City Welfare Department and also from the local press. The *Baltimore Evening Sun* had on its staff a very socially minded editorial writer who called himself its "Architectural Correspondent." This gentleman appeared to enjoy making personal slum surveys with the City Health Officer and the City Welfare Director, and with them went a press photographer who had both a very good instrument and a vivid imagination. Week by week and sometimes oftener, the slums were taken to the front doorsteps of the city by way of the editorial page of the *Evening Sun*, with somewhat whimsical but trenchant comment beneath or beside the illustration. The titles of some of these illustrated press releases were:

Titles of Press Releases

Gems of Baltimore Architecture
A Slum No More
The Great Wall of Pine Street
Early American Interior
Landscaping in a Row House District
There's Gold in Slum Housing
The Bevan Street Housing Development
The Peach Street Arc de Triomphe
Rats and a Bathtub
The Health Department's Authority to Go After Rotten Dwellings
This House Had the Honor

This went on for more than eighteen months and the resulting public reaction was more profound than had been anticipated. One result was the characteristic response, "There ought

to be a law." Of course there were nuisance abatement ordinances and fairly strong sections in the City Building Code, but the whole program was rather new and it just seemed to captivate the public attention.

Confusion Eliminated

A group of city officials, of course, was involved in the problem. Their early confusion, which has since been largely eliminated, has been described as follows:

"It soon became evident that there was a group of city officials who constituted a team with authority to take definite and suitable action in a variety of directions. It was also apparent that the team in question was very much like a group of foot-ball players who were placed on a field without uniform, without preliminary coaching or training and, under the gaze of an expectant grandstand, were called upon to produce with promptness a series of touchdowns; further, it became promptly apparent that no rules or signals had been established for their teamwork. From the early efforts it appeared as though one or another of the team at the signal secured the ball but ran in the wrong direction and made a touchdown for the opposite side."

More rock bottom slums were demolished as the months went by, and eventually there was a test case in court. This was a jury trial and the verbal description of the rat menace was apparently impressive, although of course it was only a small part of the picture. The unwilling landlord lost his case and was found guilty of violating the general nuisance abatement section of the city health code.

Ordinance Enacted on the Hygiene of Housing

At this juncture it seemed that a new ordinance on the hygiene of housing was needed. Such an ordinance was carefully prepared and enacted, and received the approval of the Mayor on March 6, 1941. It placed the responsibility for the maintenance of sanitary dwellings both on the landlord and tenant, depending on which was primarily responsible for the bad condition. It included an all-important section, that is a necessary part of much public health legislation, delegating to the city health authority power to adopt rules and regulations for the purpose of making the enforcement of the ordinance thoroughly effective. The title of the ordinance was carefully drawn and the penalty sections were specific.

It was obvious that, with only one housing inspector on the Health Department staff very little really could be accomplished; so the staff was enlarged to three and later to six inspectors, with a division chief in charge of a new Division of Housing.

Rooming Houses

Rooming houses needed Health Department supervision because of a great influx of war worker families and a genuine housing shortage of serious magnitude. Therefore the rooming house ordinance in the city health code was amended and strengthened and three series of regulations were adopted pursuant to ordinance to govern (1) the hygiene of housing, (2) rooming and lodging houses, and (3) trailer camps. More test cases developed and the new ordinances and regulations were all supported by court decisions. They have been published by the City Health Department in a pamphlet entitled, "City Housing Code."

One of the most recent court cases where the landlord was found guilty of violating the ordinance on the hygiene of housing was made the topic for Case No. 28, which was argued before the Court of Appeals of Maryland in Annapolis for the purpose of testing the validity of the city ordinance in question. This latest chapter in the saga is the favorable decision of the Maryland Court of Appeals, filed by the court on June 24, 1943, in which the city housing ordinance was upheld.

THE EVENING SUN

Published Every Week Day By
THE A. S. ABELL COMPANY
PAUL PATTERSON, President

BALTIMORE, WEDNESDAY, JULY 7, 1943

Welcome Decision

Yesterday the Maryland Court of Appeals handed down a very welcome decision, in which it approved the constitutionality of Baltimore's new health ordinance.

The ordinance in question, which was passed in 1941 in response to a strong public sense of outrage against slum conditions in Baltimore, was designed to strengthen the hand of the Health Department in enforcing minimum housing standards.

A case tried before Judge Ulman under this law was appealed, on the ground that the ordinance was unconstitutional and gave illegal power to the Health Commissioner. In its opinion, written by Judge Lindsay D. Sloan, the Court of Appeals declares that:

> The only purpose of the ordinance is to protect and preserve the health of the people of Baltimore . . .

and that

> . . . the city has the power under its charter "to preserve the health of the city" and "to prevent and remove nuisances." The exercise of charter powers by a city is not discretionary, but is a duty.

Thanks to this decision, the Health Commissioner finds yet another obstacle removed in his campaign to eliminate the worst of Baltimore's slum conditions.

Court Decision Acclaimed

The entire press of the city has supported the drive for rock bottom slum eradication and has commented fairly and impartially on the performance of the police magistrates, the grand jury, the Criminal Court, and a host of other officials in connection with the four-year effort. It is doubtless fair to say that very little might have been accomplished without the support that was so generously given by the press. The latest comment from this source was the accompanying editorial which appeared in the *Evening Sun* on July 7, 1943:

The text of the Court of Appeals decision was published in the *Daily Record* of Baltimore on July 6 and was reprinted in the August 1943 issue of *Baltimore Health News*, the monthly publication of the Baltimore City Health Department, which has also had a series of illustrated articles on the slum control program.

Thanks to Dr. Winslow

It should be stated that much of the stimulus and inspiration for the work that has been described, and that represents only one facet of a many-sided problem, derived from Professor C. E.-A. Winslow of the Public Health Department of Yale University. In numerous fields in public health endeavor in the United States many public health officials owe a lasting debt of gratitude to Dr. Winslow, and a good example is certainly the field of housing in which only the barest approach has been made in most American communities so far, although local health department activity in this matter has been effective for many years in England.

THE AMERICAN CITY Is Not Copyrighted As a Whole

Readers are free, therefore, to quote articles or items, in whole or in part, unless any particular material is indicated as copyrighted by the author.

A credit line will, of course, be appreciated.

Cement Joints for Water Mains

Marshall, Texas, Rediscovers a "Lost Art"

By H. J. GRAESAR
City Manager

SINCE water-works men and municipal engineers have been reluctant to use cement joints for cast iron water mains, and few of them wish to be accused of prejudice, they may be interested in our experience for this type of pipe connection.

A good joint should be simple to prepare, it must remain tight, and should be easily removed if necessary. A well-prepared cement joint meets these specifications excellently and gives the line a surprising amount of added strength.

Use of Cement Joint

During my experience as a city manager I have used it in water distribution work many times. Many of these have been in places where it was subject to rather rough and unusual service. We have used it to join pipes in mains ranging in size from four to eight inches with highly satisfactory results, and I feel that larger sizes would prove equally practical.

Our practice is to use one lead joint every 100 feet and use cement joints everywhere else. This eliminates the danger of breaking the bells because of the pipe's expansion or contraction, and gives the line a certain amount of flexibility. We even have been able to lower mains successsfully with these combination cement-lead joints. All the supposed difficulties that one might expect to encounter, have not, in our experience, materialized.

Procedure

The Texas and Pacific Railway has been using cement joints in their water services for many years with excellent results. This company's procedure, substantially the same as ours, is as follows:

First, place the pipe in the usual manner, cleaning thoroughly both the bell and spigot end. Then back the joint with dry jute—preferable to oakum since the jute is free from oils and grease. Next, prepare a neat cement mixture moistened so that it will keep its form when held, and it still will crumble when dropped 12 inches. The neat cement should then be tamped into place by hand with a caulking iron until the bell is about half full. It then should be caulked with heavy blows until the cement is thoroughly packed in the back of the socket. This process should continue until the bell is packed to within one-eighth inch of the face. A small bead of neat cement in a plastic condition is then placed, using the caulking iron as a trowel. As soon as the bead has taken an initial set, backfill over the joint with at least six inches of earth, form a depression over the joint, and pour at least two gallons of water into it for curing.

Bead Is Required

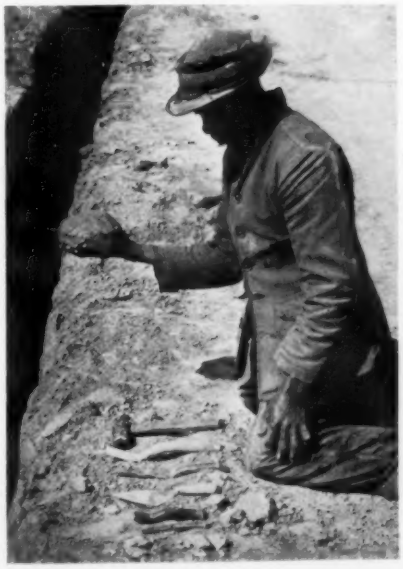
The bead is essential, as the cement packed in the bell is so dry that without protection it would absorb moisture from the water used in settling the trench—if this method of backfilling is used. Experiments on cement joints, constructed without the bead, showed that 24 hours after completion they absorbed water badly. In cases where seepage has developed and has subsequently closed, one may assume that the dry cement absorbed the moisture from the inside, expanded, and filled the seepage pores.

Must Stand 48 Hours

The joint must be allowed to stand 48 hours before pressure is applied and the main put into regular service. Cement joints have been used satisfactorily after 12 hours of setting; however, this is not a safe practice. If the joint develops leaks, it may be repaired by removing the bead and caulking exactly in the same manner as though it were filled with lead.

A cement joint can be taken apart very simply by uncovering about a half of it. The upper half should be cleaned with a cape-chisel, and the free end raised until the lower half of the joint breaks free from the bell. The pipe seldom has to be pulled out of the bell, since it nearly always works itself out as the free end is lowered. If portions of the cement stick to the spigot end of the pipe, or fail to be entirely crushed in the bell, it is a simple matter to clean the bell with a cape-chisel or knock the cement from the spigot with a hammer.

At Tyler, Texas, we lowered about 1,000 feet of line from three and five feet in a street grade project without breaking a bell. This line had lead joints at 100-foot intervals and cement joints elsewhere. The excavation for the pipe was made to proper depth,



Left: A workman shows how the neat cement looks when mixed to the proper consistency and the calking tools that he uses. Below: A view of the finished joint.

allowing each joint to remain on a bench of unexcavated earth. Consecutive benches were cut simultaneously between leaded joints for such amounts only as would not overstrain the lead joint. This process was repeated until the pipe reached its final grade. A few lead joints showed slight leaks, which were easily corrected by the use of a caulking tool. No leakage at all occurred in the cement joints. Tyler had many miles of water mains laid with these joints in 1916, and during my four years as manager of that city, we had no difficulty with them.

The best measure of a system's worth is to observe its actions when it fails. This happened at Temple, Texas, and was caused by excessive earth movements, characteristic of the locality, expanding and contracting greatly during wet and dry seasons. Building foundations seldom remain in place, causing breaks in brick walls. Therefore, cement joint failures here cannot mean a condemnation of the process.

No Leaks on Record

Mains laid with cement joints in Marshall, Texas, never have caused leaks so far as our records reveal. Recently, we relpaced 800 feet of 4-inch main, laid with cement joints many years ago, and having two intermediate lead joints and lead joints connecting each end. Only one joint was broken while the pipe was removed. The cement was cut out of the joint by the use of a chisel, cutting away a little more than half the joint on the upper side of the pipe and removing the pipe with perfect success.

Some concern has been expressed over the fact that the cement shrinks slightly upon setting, but our experience leads us to believe that this is greatly overdrawn. If concern should be felt over his possibility, one may overcome it by the use of the newly developed expanding cement used in the construction of concrete barges. We have felt that this is not necessary.

Straightening Out Some Filter Problems

IF you give water the proper chemical treatment before sending it to the filter, you will solve most of your filter operating problems, says W. E. Cuzick, Filter Plant Operator, West Texas Utilities Co., San Angelo, Texas.

"The basin is the heart of the whole treatment process," he said, speaking before the Annual Texas Short School. "The treatment that the water gets at this point will determine to a major extent the condition of the filter bed."

The most important factor in filter bed maintenance, he feels, is adequate washing. Good practice in recent years has allowed the operators to increase backwashing above the old conventional rate of 15 gallons per square foot per minute, or a vertical rise to 24 inches per minute. Sand grains must be freed from silt and deposited material at each wash, he emphasized, if the operator expects to prevent cracking and clogging of the beds.

Air Binding

Air binding sometimes constitutes a problem. However, he pointed out that it can be minimized by keeping the freeboard as high as possible. There are various methods of eliminating it, such as closing the effluent valve temporarily or opening the backwash valve slightly, but neither should be used if the loss of head is high. However, Mr. Cuzick emphasized that the utmost care should be exercised when adopting these practices. The operator should first close the effluent valve, then open the backwash valve slightly, follow this by opening the filter drain valve for a minute or two, and finally opening the effluent valve. This will avoid discharging turbid water into the clear well.

Cleaning filter sand is important, particularly when the pre-treatment has not been thorough. One method that Mr. Cuzick has found to be effective is that of soaking the entire bed, after it has been dried slightly, with a chlorine solution of approximately 10 ppm. This solution is administered until the water covers the bed for four or five inches in depth, and a residual of three to five ppm exists. The bed is allowed to remain in this condition for 24 hours; after which the backwash valve is cracked slightly, and the solution forced as near to the top as is safe and left for another 24 hours. At the end of this time, the filter is strained thoroughly, backwashed until the waste water indicates 0.2 ppm residual chlorine.

If the algae condition is particularly bad, it may be necessary to remove the sand and gravel. If iron and manganese exist in sufficient quantities, the beds may be cleaned by the use of sulphur dioxide or caustic soda.

A handy way of checking the rate of flow to the filter is to close the influent valve temporarily and observe the drop in the water level. This drop should be six inches in one minute and 52 seconds, if the rate of flow has been set correctly so that the bed will filter at the rate of 125 mg per acre per day.

Records

Records are particularly important, said Mr. Cuzick. They should include the number of hours the filter is operated, gallons of backwash per unit, hours between backwashing and any noticeable change in operating conditions. Complete records should be made and kept on a daily, monthly, and annual basis. Mr. Cuzick observed that, although most filters are still based on the conventional design rate of 125 mg per acre per day, engineers have shown a tendency to specify coarser and more uniform sand. This, he feels, seems to prevent formation of a dense film on the surface, which precludes a rapid increase in the loss of head. He further has noted that mud balls are less apt to occur when the beds are constructed of coarse sand.

Aid for CD Workers Injured While on Duty

OFFICIALLY accredited civilian defense workers will now receive temporary aid if injured in performance of their duties, according to a recent announcement. Medical and cash benefits for the injured are made available under a program known as the War Civilian Security Program and will be administered by the Federal Security Agency. This agency has delegated the medical care to the U. S. Public Health Service.

In addition to medical treatment, public assistance to civilian defense workers injured on official duty, or to their dependents, will be administered by the Social Security Board through their Bureau of Public Agencies. Such assistance will be provided through the state and local agencies acting in behalf of the Federal Government. If the Civilian Defense worker dies as a result of his injuries, burial expenses not to exceed $100 in any case, will be paid.

Registered trainees also are included in this program.

New Wells Overcome Water Shortage

Montgomery, Alabama, Taps an Artesian Supply to Meet a War-Induced Water Load

By George H. Watson

ADDITIONAL artesian wells which will gush forth a plentiful supply of cool water are now being drilled for the new water supply of Montgomery, Ala. This is a part of a water-works addition which necessitates the drilling of new wells, the laying of several miles of cast iron mains, and the construction of a new pumping plant and storage reservoirs.

The city was already supplied with artesian water from seventeen electric driven wells and seventeen air-lift wells with a yield of 9,500,000 gallons of water per day. But this was not enough to supply the increasing needs of the city occasioned largely by the location within its midst of two new military training centers. In order to bring in more water a new well field is being developed to add some 4,000,000 gallons per day to the supply at the present. This new supply will, at some later date, be increased to 10,000,000 gallons. The wells are 600 to 700 feet deep and the water retains a temperature of approximately 70 degrees the year around. In the new field, three wells have already been drilled and tested. The capacity of these three is approximately 2,000,000 gallons per day. These will not be cut into the distribution system until the remaining wells and the connecting mains are completed and tested. The water requires no treatment except aeration. It will, however, be given a small amount of chlorination as a public health precaution.

Pipe Lines

The pipe lines laid in connection with the addition consist of approximately 4 miles of 24-inch mains, ½-mile of 20-inch mains, ¾-mile of 16-inch mains, and about 2 miles of 12-inch mains. The improvement program also calls for ground storage reservoirs of 4,000,000 gallons capacity, and a new pumping plant of ten million gallons per day capacity.

Plans and specifications for the storage reservoirs and pumping plant are now being completed by the consulting engineers, and bids will be taken on this third section of the work at an early date.

The cast iron pipe for the water mains, supplied by American Cast Iron Pipe Co., of Birmingham, Ala., is of the bell and spigot type, cement lined and treated with asphalt on the inside. Various type bends, tees, and gate valves, the latter by M & H Valve and Fittings Co., of Anniston, Ala., are being used on the job. The trench for the pipe is being dug by a back hoe shovel and a trenching machine, and the pipe put into place with the use of A frames. From 200 to 500 feet of pipe are laid per day in town, and 600 feet out of the city limits where paving and intervening utilities do not obstruct.

S. B. Perry of R. L. Kenan and Associates measures the flow from one of the new artesian wells.

The pipe, after being laid, is lead caulked at the joints with a pneumatic hammer. On each 1,500 feet of pipe or less a leak test is run by filling with water and subjecting to a pressure of 150 pounds per square inch for two hours. The section is then disinfected, so that the part tested can be cut into the system when desired.

It was necessary to carry the main 24-inch raw water pipe line and a 16-inch clear water line under a railroad yard. This is done by encasing the two pipe lines in a 72-inch concrete pipe conduit. This conduit will be installed by "jacking" it under the 14 railroad tracks, in order to prevent interference with the railroad traffic and switching.

The contractor sunk the wells by using a derrick, power rig, and hoist in regular oil-well style.

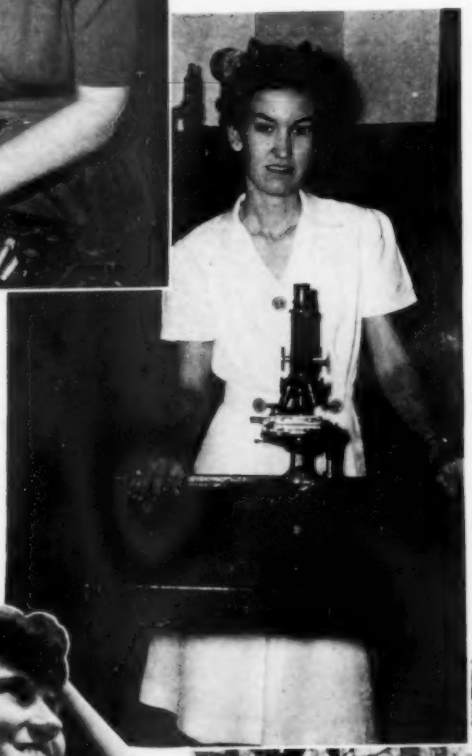
Supervision and Construction

The contract for Section 2, the laying of the pipe line, is held by Bush Building Co., Nashville, Tenn.; and for Section 1, the wells, by Layne-Central Co., Memphis, Tenn. R. L. Kenan & Associates of Montgomery, Alabama, are the consulting engineers. Work is being done under the direct supervision of the consulting engineers and the general supervision of the city and the Federal Works Agency. Cyrus P. Brown is Mayor of Montgomery, and William P. Screws and William A. Gayle, Associate Commissioners. O. L. Skinner is City Engineer, and F. J. Salter, Water Works Superintendent.

A line of cast iron pipe stretched out along one of Montgomery's shaded streets.

Women Who Serve Their Cities

The Municipal Counterpart of the Wacs, Waves, and Spars

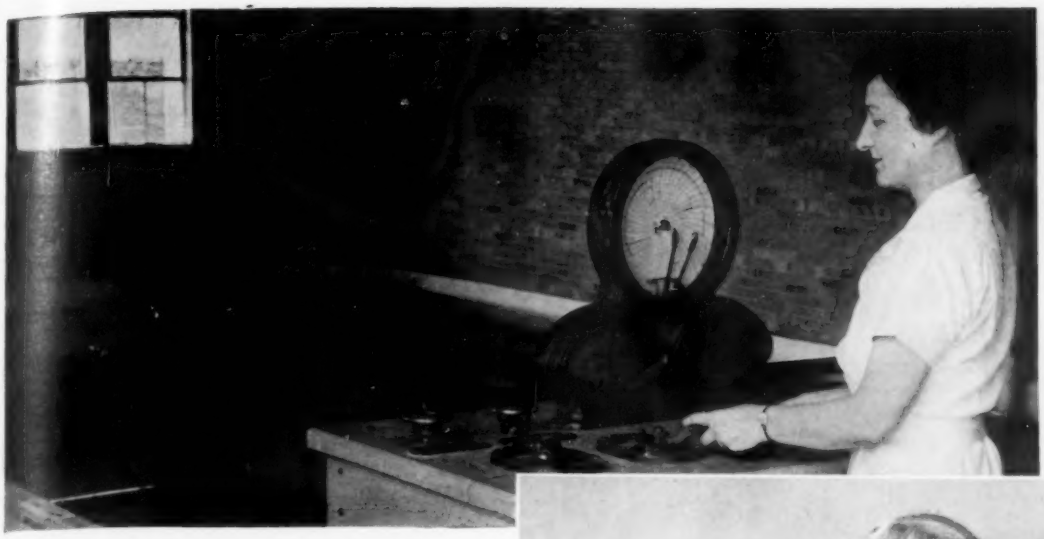


Upper Left—Women's deftness in handling delicate parts is demonstrated by the skill of Mrs. Beulah Scates in repairing an electric meter. She is on the staff of the Knoxville, Tenn., Electric Power and Water board.

Left—Miss Elizabeth Fushey is one of the two women who entered the laboratory of the Dallas, Texas, sewage-treatment plant. Both Miss Fushey and her co-worker, Mrs. M. M. Reddy, not shown, have fine technical backgrounds. Each is a graduate chemist and is doing exceptionally good work.

Lower Left—Mildred Hofer, of the Union Metal Mfg. Co., Canton, Ohio, peacetime manufacturer of street-lighting standards, adjusts her new "WOW" bandana received in connection with a Maritime "M" award.

Below—Service Guard Mary Cunningham halts traffic at her post near a Chicago public school so that children can cross the boulevard safely.



Above—Filter operation in the Knoxville, Tenn., water-treating plant is now under the careful direction of Miss Frances Wylie.

Right—The rigors of war do not seem nearly so hard with guards like Miss Valentine Oka patrolling one of Chicago's many outdoor swimming pools. The Chicago Park District now has 95 such young ladies on duty in its 42 swimming pools and 12 beaches.

Lower Right—Working beside her husband, Mrs. Carl Fehlandt helps collect garbage and refuse in Waterloo, Iowa. The modern, easy-loading truck body makes the job less difficult by eliminating much of the heavy lifting.

Below—"They do a fine job," says W. P. Fannon, Street Cleaning Engineer, Baltimore, Md., of his women street sweepers. "We have had many requests that they be kept on permanently after the war." Baltimore has a corps of some 75 women, all colored, in the street-cleaning department.

Kilowatts for Crawfordsville

A view of Crawfordsville's veteran municipal electric plant

Fifty-three Years' Operation of This Indiana Municipal Electric Plant Has Brought Concrete and Tangible Benefits to Its City, While Furnishing Power at Attractively Low Rates

By RAYMOND O. EVANS
City Attorney, Crawfordsville, Ind.

THE distinction of being the first city in Indiana to own and operate a municipal utility belongs to Crawfordsville, a city of 11,000 population, located in western Indiana.

Crawfordsville—widely known as the home of Gen. Lew Wallace, Meredith Nicholson, Kenyon Nicholson, Maurice Thompson, and other authors and culturists of world-wide reputation, as well as the home of Wabash College—established the Crawfordsville Electric Light and Power Plant in 1890. It has been in continuous operation since that year.

Customers Served

The utility provides electricity for over 5,000 consumers, and in recent years has constructed some 300 miles of rural lines in an effort to provide the agricultural districts with rural electrification. Eleven towns and villages also receive electricity from the utility.

The power plant is located on Sugar Creek, in the north section of the city. It is a steam plant with a capacity of 11,500 kw. Steam is generated from Indiana coal fed to the boilers by chain grate stokers. The plant has three Babcock-Wilcox boilers, Sterling type. These are fueled by two Combustion Engineering, Cox type stokers, and by one Illinois Chain Grate stoker. Boiler pressure is 225 pounds, and plans are under way for converting to high pressure when such equipment is available. All water requirements, including boiler make-up water, are met by water pumped from Sugar Creek.

Power Generation

The generating facilities of the plant consist of three Westinghouse turbines. One of these is a 5,000-kw unit, which is capable of carrying the entire load of the utility. The other two units, 3,500-kw and 3,000-kw, are held in reserve.

The company has recently installed a Westinghouse metal-clad switchgear of the latest type. Through the switchgear, electricity enters the distribution system for consumer use. The electricity is carried at 4150 volts.

Coal Fed by Gravity

The power plant possesses one natural advantage that its designers capitalized to make the utility operate with more than ordinary economy. Since the plant is located at the foot of a tall bluff, simplification of coal handling was effected by constructing the coal bunkers at top of the bluff. Coal is dumped and passes to the stokers by gravity.

Management

The plant is operated by the Board of Public Works and Safety, appointed by the Mayor, Thomas L. Cooksey, now serving his eleventh year as chief executive of the city. The Board is composed of the Mayor; the City Engineer, Lex B. Gore; and Raymond O. Evans, City Attorney.

These appointments are political. However, it is only fair to say that politics are held to a minimum. In changes of administration, from time to time, skilled employees, regardless of politics, are retained; and members of both political parties are and have been employed at the plant and in the system for many years. The average tenure of skilled employees is about 20 years. The Chief Engineer, Floyd M. McClelland, has been with the utility for 32 years, through eight different administrations. The present Superintendent, Glen D. Hayworth, has been maintained through four administrations.

The power plant is operated on a 6-hour per day basis, 7 days per week. The remainder of the system operates on an 8-hour day, 5½ days per week. Two weeks vacation and liberal sick leaves are available. Forty-one persons are employed in the organization.

The utility has no indebtedness of any kind. An improvement program amounting to $350,000 was completed in 1939, and was financed by cash set aside for that purpose.

Rates

The rates charged by the company are among the lowest in the state. Typical rates are as follows:

DOMESTIC GENERAL SERVICE

First 30 kwhr	5c per kwhr
Next 30 kwhr	3c per kwhr
Over 60 kwhr	2c per kwhr

Minimum charge 50c per month

COMMERCIAL LIGHTING

First 50 kwhr	5c per kwhr
Next 150 kwhr	4c per kwhr
Next 400 kwhr	3c per kwhr
Over 600 kwhr	2c per kwhr

Minimum charge 50c per month

COMMERICAL POWER

First 50 kwhr	3.5c per kwhr
Next 250 kwhr	3c per kwhr
Next 500 kwhr	2.5c per kwhr
Next 1,200 kwhr	2c per kwhr
Next 8,000 kwhr	1.4c per kwhr
Next 50,000 kwhr	1.2c per kwhr
Over 60,000 kwhr	1c per kwhr

Profits

The utility has always produced a substantial profit for the city and its citizens. It is maintained in the best of condition at all times. The following net profits have been earned after deducting all expenses, including depreciation (currently charged at 5%):

1938	$129,175.98
1939	145,385.35
1940	156,024.96
1941	174,989.80
1942	180,870.48

This net profit is equivalent to a dividend for every citizen of the community of $17.22 for 1942. In the last 16 years the utility has yielded a net profit of $2,117,767, of which about $1,199,000 has been transferred to the city general fund for the purpose of reducing the taxes of its citizens, and for financing needed public improvements and equipment. Out of these profits the city has been able to construct its $125,000 municipal building and its popular golf course and club house.

The Crawfordsville utility, without promotion or advertising upon its part, has gained a favorable reputation in many parts, and its officials are invited, from time to time, to discuss municipal ownership in communities of the midwest which are considering the acquisition of their utilities. On such occasions remarks are usually confined to a discussion of over 50 years of municipal ownership in Crawfordsville.

Business-like Operation

We, here, are not attempting to sell this idea to the public as proper and feasible for every community. It has been demonstrated that public ownership will not work in all cities. But given a fair trial, a municipal utility will prove to be a great asset to most communities.

We like to feel here in Crawfordsville that our utility is operated as efficiently, and along the same general lines, as the most successful private utility. We feel that we should be subject to the same regulation and control as a private utility. We pay the same state gross income tax. And until 1940, when the case of *Chadwick vs The City of Crawfordsville* was decided by the Supreme Court of Indiana, we were also subject to the usual local and state property tax.

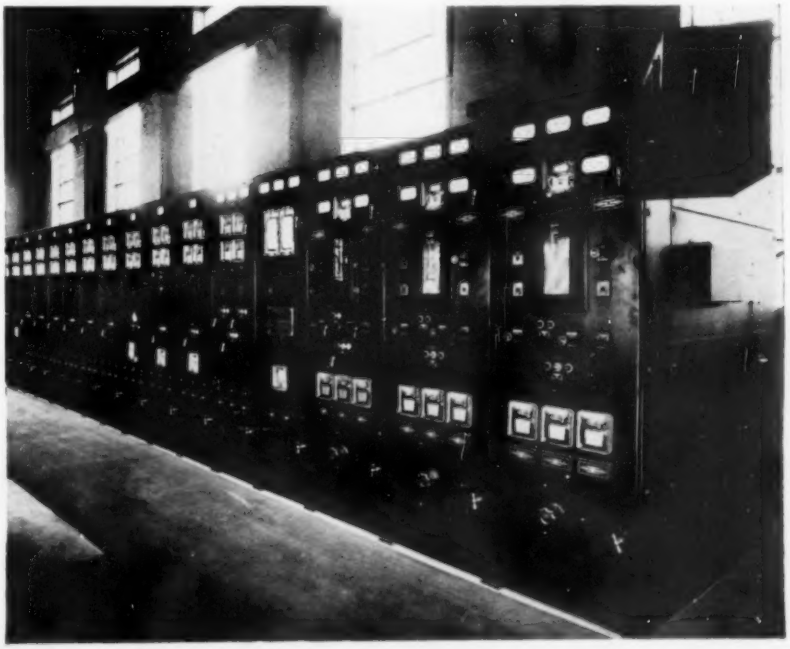
The profit that the utility returns to its stockholders—its citizens—is far greater than any loss suffered by the absence of a private utility. As one local citizen has paraphrased it: "If this be treason, we make the most out of it."

Over a half-century of experience has demonstrated the wisdom of the founders of the Crawfordsville Electric Light and Power Plant.

North Dakota Enacts Engineer License Law

On July 1, North Dakota became the 46th state to require registration of its professional engineers. This is the result of an act passed by the state legislature and approved by the Governor. It was supported actively by the North Dakota Society of Professional Engineers which was organized in 1940.

For its first three-member State Board, Governor John Moses has appointed Jay Wesley Bliss, City Manager, Minot; Alexander Carothers Burr, Consulting Engineer, Jamestown; and Clifford Johnson, Bridge Engineer, State Highway Department, Bismark.



A view of the modern 14-section metal-clad switchgear which centralizes all the controls for the 11,500 kw power plant in this city

New Plan for London Offers Sane Ideas for American Cities

By HOMER HOYT
Director of Research
Chicago Plan Commission

IN planning for the post-war development of American cities, there are two schools of thought which are as far apart as the poles. According to one view, the entire existing structure of our urban communities should be either scrapped or ignored and new cities should be designed according to the heart's desire of the planner. At the opposite extreme are those who contend that no long-range plans of any kind should be made, but that new thoroughfares should be laid out, and new houses, stores, and factories should be built whenever and wherever it is economically feasible or government funds can be secured for the purpose. It is true that there is a middle ground, such as that proposed by the Chicago Plan Commission for rebuilding Chicago,* but the two extreme views noted above have been so widely publicized that it is no wonder that large numbers of our people are ready to condemn planners either as visionary or as opportunists.

At this time, when the opinion of many persons is fluctuating between these two extremes, the reading of the "County of London Plan"† should direct thinking to the formulation of a sane and sensible course of action, which should guide our policies in rebuilding American cities in the future.

Avoiding the Radical Left and the Reactionary Right

Before embarking upon the main objectives of post-war urban redevelopment, it is necessary to dispose of both of these extremist schools of thought. The authors of this report rout the arguments of both the radical left and the reactionary right wings of planning in quick and decisive fashion. In answer to the visionary planners who would scrap existing communities entirely, the authors say:

"To ignore or scrap these communities in favor of a new and theoretical subdivision of areas would be both academic and too drastic; the plan might look well on paper but it would not be London. The planning of an existing town should stimulate and correct its natural evolutionary trends. The plan now submitted is designed to include the best of existing London, to enhance its strongly marked character, and to respect its structure and spheres of activities, but at the same time, and drastically if need be, to remedy its defects." (Page 3.)

On the other hand, to the opportunists, the wait-and-see and plan-in-a-hurry school of thought, the authors give the following reply:

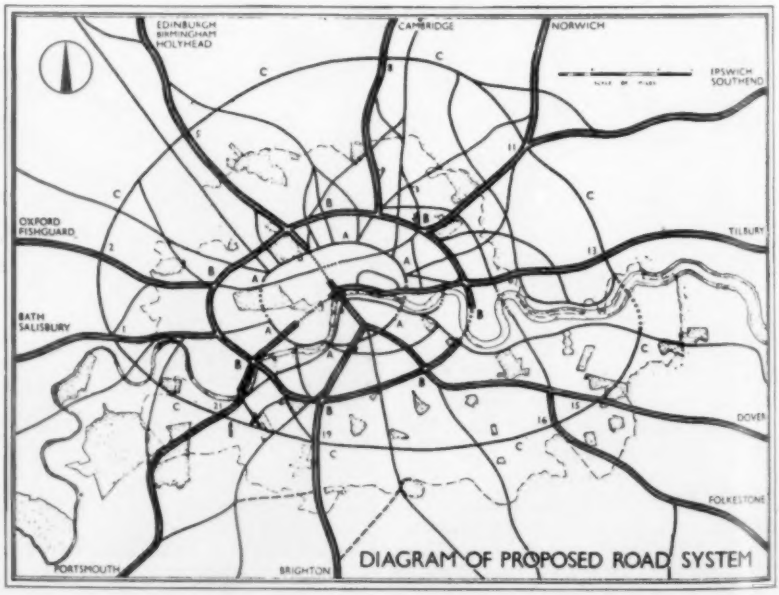
"Are they [houses] to be built on isolated sites picked up from time to time, perpetuating an antiquated street net, or are they to build up into a general community plan, which the inhabitants can see gradually realized before their eyes? Does a translation of blocks of housing into real societies of men and women in a planned form in fact cost more than haphazard building? No one denies that road improvement is essential, if traffic is not to slow down to a complete standstill when it returns after the war in increased volume; are these improvements to be isolated palliatives, a set of traffic lights here, a roundabout there; or are they to be part of a general highway development scheme, which, again, will be based upon far-reaching industrial and residential regrouping?" (Page 18.)

In a classic statement the authors reconcile short-range and long-range planning:

"There are always short-term and long-term projects, and it calls for the skill of the planner to contrive that the short-term projects are complete in themselves as far as they go and yet fall into line with the final completed scheme." (Pages 17-18.)

Reestablishing Neighborhood Communities

One of the main objectives of this grand plan for London is to reestablish the original communities of London and to separate by open areas, the original suburban towns which were merged together by the sprawling growth of the great metropolis when it was "more planned against than planning." Every larger community would be subdivided into a number of smaller neighborhoods, each of which would be built around an elementary school. These self-contained communities would be integrated, however, with the main transportation routes which would pass around rather than go through the residential sections, and also with major shopping, industrial, and commercial centers. Central London would be rebuilt on the basis of a population density sufficient to house many workers desiring to live near central places of employment, yet not so great as to crowd out recreation spaces or to shut out light and air in the dwelling units.



Facilitation of traffic flow is one of the major objectives of the County of London Plan

* For a preview of this plan see *New Pencil Points*, March 1943.

† "County of London Plan." Prepared for the London County Council by J. H. Forshaw and Patrick Abercrombie. Macmillan and Co., Ltd., London, and The Macmillan Co., New York. 1943. XII + 185 pp.

The authors present detailed plans for rebuilding. They stress the importance of planning by stages and of keeping their plans flexible enough to meet changed conditions. This report contains excellent photographs and maps showing the existing major use zones of London. The authors discuss and correlate all the major elements of the Master Plan: housing, parks, communication, commercial and industrial districts. By seizing the opportunity that exists as a result of the clearing of large areas by bombing, London can "create an environment worthy of our sacrifices."

In the reviewer's opinion, this is one of the most practical plans for accomplishing the objective of gradually rebuilding existing cities according to a better pattern than has yet appeared in print. The problem of the "grafting of a new, vigorous growth upon the old stock" of a city is here admirably treated. The vigor and beauty of the author's style reaches the heights of prose composition; the photographs, diagrams, and charts splendidly illuminate the text.

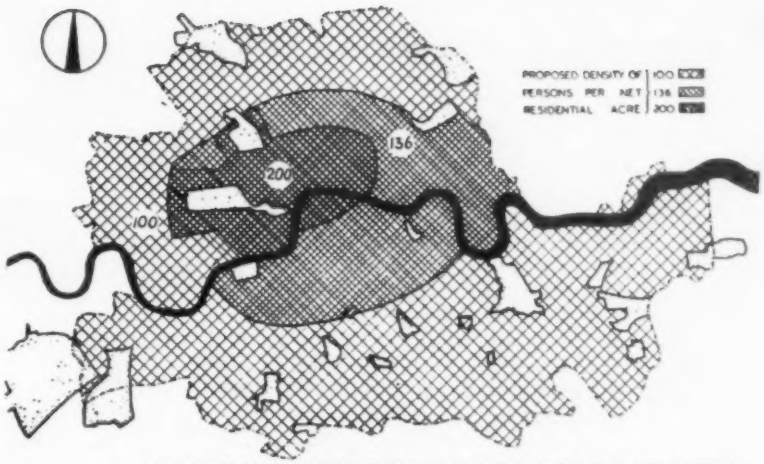


DIAGRAM OF PROPOSED POPULATION DENSITIES

In the County of London plan, density is calculated on a basis of persons and not houses or square feet of housing accommodation per acre.

Three standards of 100, 136, and 200 persons per net residential acre are proposed. If open spaces and community buildings are included the densities would be 60, 75, and 97. On this basis accommodation outside the county will have to be found for about 500,000 people.

Although small houses with gardens are preferred by the London planner, only one quarter to one-third of the population could be thus accommodated; therefore a large percentage of multi-family dwellings must be included.

Density figures are considered in relation to specific areas and the amount of decentralization is worked out on the basis of each figure.

Lot Sizes and Land Values

A PROBLEM demanding careful study by tax assessors and real estate appraisers is presented editorially in the July 1943 isue of *The Appraisal Journal*, the quarterly magazine of the American Institute of Real Estate Appraisers. To quote in part:

"For almost 200 years the 25-foot lot has been considered as the proper division of a unit of ownership. Today, however, neither dwellings, apartments, nor commercial structures can be erected on lots of that size. . . .

"Today a price of 20 cents per square foot for a standard lot may jump to $2 a square foot when that lot becomes part of an assembled plot, say, of 10,000, 50,000, or 100,000 square feet in size. This was recently illustrated by the testimony of one of New York's leading appraisers. When asked by opposing counsel what, in his opinion, was the value of a 25-foot Wall Street lot, he stated, 'Nothing.' 'And,' queried the counsel, 'a 50-foot lot?' 'Nothing,' came the answer. 'And a 100-foot plot?' persisted the counsel—the answer came, clear and assured, 'One and one-half million dollars—$15,000 a front foot—or at the rate of $375,000 a lot.' . . ."

Appraisal Principles and Blighted Areas

The same issue of *The Appraisal Journal* carries an important article by Homer Hoyt and Leonard C. Smith on "The Valuation of Land in Blighted Urban Areas." Discussing possible Federal legislation such as proposed in the Thomas and Wagner bills* now before Congress, this article points out that:

"Whether or not the tremendous task of rebuilding our urban blighted areas is undertaken at all, will depend to a large extent upon the formulation now of a basis for appraising that will afford Federal and municipal authorities some approximate idea as to the total cost of acquisition of slum land. If the prices to be paid fluctuate widely and are not to be governed by established rules, Congress may well hesitate to appropriate funds for this purpose. If the cost of acquiring blighted area sites is too far above the amount that can later be realized in sale or lease for redevelopment projects, the grand plan for rebuilding our cities may die in its inception, and in that event blighted properties will not only sink lower and lower in value, but they will pull down other urban values with them."

Six methods of reducing the cost of acquiring land in blighted areas are explored by Dr. Hoyt and Mr. Smith under the following headings:

1. Foreclosure of Tax Delinquent Properties
2. Enforcement of Health and Safety Regulations
3. Economies Through Closing of Unnecessary Streets
4. Purchase of Reversionary Rights in the Land
5. Absorption of High Costs by Difference in Interest Rates
6. Inflation

In the opinion of the authors:

"There is little prospect of any higher and better uses, if the fate of blighted areas is to lie in the hands of thousands of scattered owners, unsupported by public assistance. Since no new buildings are likely to be erected in slum areas under these conditions, even a quarter square mile of land in such sections would have only a negligible value.

Grave Responsibilities

"If on the other hand, the appraiser assumes that there is a reasonable chance that the Federal Government will appropriate a billion dollars a year for the acquisition of blighted urban land and that some of it will be expended in the neighborhood surrounding the subject property after the war, then he must estimate how much a quarter square mile of slum properties will be worth as a site for a redevelopment project. A plottage increment will result from assembling the scattered individual lots into a tract of neighborhood size. The appraiser, however, in valuing small holdings in the blighted areas cannot allow a plottage increment, but he should estimate the value of a single lot only on the basis of what it is worth to the owner as a part of a slum. . . .

"From every angle of our national welfare, therefore, as well as from the standpoint of sound appraising practice, it is of urgent importance that realistic principles of valuing land in blighted areas be practiced by the appraisal profession and that conservative valuations be adopted by the courts and accepted by the property owners. Never before have appraisers been called upon to evaluate trends of such far-reaching magnitude and importance or to accept such grave responsibilities for promoting our future national prosperity."

* See THE AMERICAN CITY for May 1943, page 71, and July 1943, page 38.

Local Government Is News—32

City Hall and Post-War Planning—I

By PHILLIPS BRADLEY

IT is "the end of the beginning"—in more than the winning of the war. There are many straws in the wind which indicate growing interest in—and concern about—America after the war. For nearly a year, THE AMERICAN CITY has carried numerous articles and items on post-war projects being planned by City Halls from Eastport to San Diego, from Key West to Bellington.

Certainly it is not too soon to trace the actual blueprints of the specific projects which will advance the improvement of urban life. Our experience with improvised action without adequate planning during the 1930's is too recent to allow us to forget the necessity of integrated, long-range programming for effective physical reconstruction.

If timing is all-important to effective blueprinting, it is not less so to the conversion of the blueprints into community action. City Hall's job is not finished when the plans are drawn and filed on what has come to be called the public works "shelf." Some make-work projects may, it is true, be popular in the months after the armistice—if there are more people seeking work than there are jobs available. There may then be a brief fillip to local improvements.

Such a temporary support of local construction, even planned construction, is, however, a poor foundation for broad-gauge urban reconstruction. City Halls owe their citizen-stockholders a better basis for community attitudes toward long-range planning. They will need that basis if they are to develop adequate community response to—and support of—the program behind the blueprints on the shelf. Besides, together with physical planning there must be psychological planning for improved community living. What can—and should—City Halls be doing now to develop an opinion "reserve" for planning?

Building an Opinion "Reserve"

Daniel Burnham's advice, "Make no little plans," should be the keynote of any adequate post-war urban reconstruction program. Whatever the size of the community, City Hall cannot afford to present less than a Grand Design to its constituents, the citizens.

Civic pride is a vital element in community consciousness—an element not as widely shared by the citizens of our modern, dessicated cities as by their ancestors in the more integrated communities of the pre-industrial era. Those towns and cities were, indeed, in many ways better designed for community living than most of their unplanned counterparts of today.

Their citizens found much of which to be proud in the very layout of their home towns. Their local loyalty was stimulated by the grandeur of the plans, even if it was only partially fulfilled, still largely "in being," still to be completed. Its broad sweep—no little plan—was at once a symbol and a goal, both worthy of the effort and the loyalty of the citizen.

THE AMERICAN CITY is interested in exchanging information on programs being developed by different cities to educate the community on post-war planning. Write the Editor at 470 Fourth Avenue, New York 16, N. Y., on your local educational program in this field.

The present is an unrivalled era for recreating something of this spirit in the citizens of every American city. By presenting them with "no little plans" but with a Grand Design for the reconstruction of *their* community, City Hall can most surely develop an opinion "reserve" of support for adequate post-war planning. Not alone a series of separate projects, no matter how worth while individually, but an integrated pattern for the future—this will prove the best insurance for achieving the projects themselves.

Translating the Plan into the Vernacular

Plans on paper are a long way from completion. The "reserve" requires more than civic pride for its effective application to the business of converting post-war blueprints into reality—indispensable as that ingredient is. Understanding of the details of the plan as a whole and how they will affect life in each neighborhood within the community will do much to insure citizen acceptance—and support.

Here City Hall has a no less direct responsibility to its constituents. Merely to name and to announce a post-war program, however adequate, will not alone enlist either interest or acceptance. Rather, the details must be translated into neighborhood terms—geographical and intellectual.

How will the various projects affect living and working conditions in different sections of the city? How do they tie the different sections together—in terms of transportation, housing, shopping, recreation? What will they cost: how can they be financed? How will they affect property values?

These are only a few of the questions to which City Hall's constituents in different sections of the community will want the answers. Nor will they all be asked, especially in the larger cities, in the same language. The answers must be translated in a second way, not only sectionally but in terms of various interests and varying levels of civic understanding. The banker and the bootblack, the taximan and the teacher, the realtor and the ragman, the laborer and the lawyer will not all ask the same questions; they do cast votes all counting the same. They have an equal right to the services of City Hall in making the details of the Grand Design clear—and understandable.

A Dual Job: A Single Objective

City Hall's job, then, is a dual one. On the one hand, it has a primary responsibility — and opportunity — to blueprint the community's post-war development. Only plans commensurate with the economic and social standards which a democratic victory implies will enlist the fullest loyalty of the community for a long-range program.

On the other hand, City Hall must translate these plans into the language of everyday interests, of common concerns, of *all* its constituents. It cannot cultivate—or benefit—one section of the community, geographical or social, at the expense of another. It must devise a plan—no less comprehensive or carefully articulated than the physical plan for post-war reconstruction—for developing an opinion reserve behind the blueprint shelf. How to carry out the second aspect of its job will vary from City Hall to City Hall; it is common—an imperative—to them all.

Bridgeport Is Now Microfilming All City Records

By PERRY W. RODMAN
City Comptroller, Bridgeport, Conn.

WHEN war broke out, the uncertainty as to how much of it would take place over here was quite complete. What had happened to England was in the minds of all of us. If we were bombed, what might we lose besides lives, real estate, and personal property? What would we miss most after the war, even years after, when griefs had been somewhat assuaged and physical property had been replaced? From a purely municipal point of view, the city government of Bridgeport, Conn., gave heed to its irreplaceable city records.

A half-dozen years before anybody thought of being bombed, it was known here that the right thing should be done to protect the city's records against fire and wilful neglect, and to reduce storage space. To safeguard the originals of these records would require an air-conditioned vault the size of City Hall. It was in this calmer pre-war atmosphere that I became interested in the process called microfilming. Last year, 1942, I had borne in on me the fact that not only were we unprepared so far as preservation of records was concerned, but also that we would be in "a terrible box" were any of our records to be destroyed, because we could not reconstruct them.

Hearing of a microfilming project at the Remington Arms Company, I visited the plant and found that they had engaged the Microstat Corporation, on a service basis, to film their blueprints and specifications. I decided then and there that this process would fit in ideally with our own requirements for municipal records. The company made a complete survey of our records, and after they had made 50,000 exposures, we purchased their J-7 electrically controlled camera to continue the work ourselves. I believe this company has 14 license branches, including one in Mexico City.

The Bridgeport Standard.

MAYOR REYNOLDS TO THE ALDERMEN.

He Delivers Annual Message and Goes On Record as Favoring Large Number of Improvements.

TAKE TIME

New Water Commissioner Will Be Carefully Selected.

Last Edition. EVIDENCE OFFERED

Schreiber Mistaken in Testimony He Swore To.

FIREMEN MAKE THREE RESCUES.

Young Girl and Two Women Taken Out of Burning Building on Main Street This Morning.

LOCATIONS.

Three For New Engine Houses Are Being Selected.

MRS. ROOSEVELT.

She Contributed To Motherhood Club Festival.

TONY FOUND

Man Wanted For the Shooting Of Cuse Gallo.

COOL DRIVER

Accident Averted By Action of Fireman Walters.

MESSAGE READ

That of the President in Both Houses of Congress.

A page of the Bridgeport Standard of December 5, 1905, taken from the only complete file in existence, the property of the Bridgeport Public Library. Note the comparative size of the small black spot in the upper right-hand corner to the sheet itself. One year's file of this newspaper reproduces in five rolls of film, using ¾ cubic feet of space. Readers interested in the sources of great ideas might put a reading glass on the last paragraph on this page of 38 years ago, and find the Rev. George C. Richmond telling the Elks that "the corporation officer who takes more than $25,000 a year salary is a thief."

After each roll of microfilm is run off and processed, positive facsimile positives, or "reading" films are made. These can be projected by a "reader" machine having a high precision lens which enlarges the film image to the full size of the originals with a fine degree of clarity. By using this method, a taxpayer, for instance, can at any time check the records of the Town Clerk or tax office with ease and facility.

Among the records which we have already photographed are the vital statistics of the Health Department; the full records of the Engineering Office consisting of maps, specifications and reports; and a large section of the property records of the Town Clerk. We have completed the newspaper files of the Bridgeport Public Library, one file of which is irreplaceable. It is the only complete file of this particular newspaper in existence. These, along with a multitude of miscellaneous records, constitute our job so far. I have not attempted as yet to figure the cost. It is my opinion, however, that it will

run considerably less than two cents an exposure. I believe that this is about as cheap insurance as you could get to make certain of the replacement of your records, and certainly is a whole lot less expensive than building—what would now be impossible to build—an air-conditioned, fireproof vault.

We now have half a dozen vaults in the city ranging from one that is about 150 feet long by 25 feet wide down to one that is 8 by 8 feet. Right now all of these vaults are crowded almost to the limit with records. Eventually, all the records of the city that must be retained indefinitely will be on film. The entire lot of microfilm duplicates will then be stored in a fireproof time vault and will release 99 per cent of our present filing space.

Recent Fire Endangered Records

An incident which emphasized the necessity for this procedure was the fire that occurred in the Franklin Sturdevant block in Bridgeport on November 24, 1942. This block is used as an adjunct to the City Hall, and at the time of the fire certain prints of the Engineering Department were in the block. As luck would have it, we were able to remove most of these documents before any harm was done. It was a close call, but had the prints burned, we still would have been protected by Microstat's insurance coverage.

To city and town officials who have storage-space problems, I strongly recommend the use of this method of self-protection. In the last 3 months there have been 82 days of work put in on microfilming 81,779 exposures made. That averages approximately 1,000 per 6½-hour working day, or about 150 exposures an hour or better than 2 a minute. This rate is not too tough when it is considered that most of the time, awkward-sized sheets are being handled or heavily bound volumes are being forced open so that they are spread wide enough to photograph properly without shadows. Included in this time, also, is the film developing. I suppose this could be considered a reasonably average production. Were I to force it, it could be stepped up perhaps one-third more. Again, however, the rate of production is contingent upon the subject matter. As to when the job will be finished, the answer is, "Never, as long as this method of recording is continued." In the first place, Bridgeport was 100 years old in 1936, and some of our records go back almost to 1836—and, of course, each day brings its new batch of permanent records.

I suppose I could write a book on this subject now, but space limits what I can record here. I would like to give the invitation, however, to those who would like to have further details to write either to THE AMERICAN CITY, 470 Fourth Avenue, New York, or address me directly.

What Are Fire Extinguishers for?

IN at least 800 cities there are war plants and military establishments which add to the responsibilities and difficulties of the municipal fire departments. Nearly all of these are more or less adequately equipped with fire-fighting equipment, including extinguishers. Frequently the right extinguisher is the device which will stamp out the incipient fire. How many men know which is the right extinguisher for a particular fire and know how to use it with immediate effectiveness?

A few years ago in a Brooklyn plant, employees had the habit of heating a certain type of lacquer in a big spoon over an open flame. One day the expected happened. The lacquer flashed. The frightened worker dropped the spoon and jumped out of danger. In a few seconds the blaze was well under way. *There was not one person in the entire factory room who knew what to do!* No one touched a fire extingisher. Not a person made a move toward the blaze. There was a sudden rush for the exit. Seven lives were lost and the plant was a total loss.

How to Teach Fire Fighting

This is told by Walter Kidde & Co., 140 Cedar Street, New York, in a 16-page manual entitled "How to Teach Fire Fighting." It urges teaching by actual demonstration rather than by lectures and moving pictures. As all fire extinguishers should be checked annually, and some must be emptied and refilled, it is suggested that every plant do this in the course of an annual fire demonstration of proper methods.

The demonstrator should be trained in fire extinguishing, as any amateur gesture reduces the self-confidence of the pupils. He should be able to answer questions certain to be raised.

Fire results from the presence of combustible material, high temperature and oxygen. Remove one of those elements and there is no fire. If excelsior catches fire and you gather it up and dispose of it, there is no fire left in the room. The fire disappears if the temperature is reduced sufficiently, as by water. The fire dies if the oxygen is reduced much below the normal proportion of 21 per cent.

The ABC's of extinguishment are that a Class A fire occurs in ordinary materials, and is quenched with water, foam or a soda-acid extinguisher. Class B is inflammable liquids and greases and is extinguished by foam or carbon tetrachloride or carbon dioxide extinguishers. The class C fire is in connection with electrical equipment and is put out by carbon tetrachloride or carbon dioxide extinguishers.

The new Kidde booklet describes clearly the principle, method of use, and the correct application of each type of extinguisher. Probably in most plants all the types could be needed at one time or another. Having them available is less than half the battle. It is knowing *which* to grab and *how* to use it that spikes the fire. Ideally, everyone in an organization ought to see such a demonstration and handle the extinguishers. In case of a real fire, there is no time to hunt up somebody who knows whether and how to use a water-type, vaporizing, dry compound, or carbon dioxide extinguisher.

Fire department officials have given this problem considerable attention. Their job is easier if there are in each plant those who serve by prompt action rather than by standing and waiting. Reading "How to Teach Fire Fighting" is a real step toward knowing how to fight fires.

What Is the Future of the Real Estate Tax?

Excerpts from the Section on "Municipal Financial Problems and the General Property Tax" of the 1943 Report to the Secretary of the Treasury by the Committee on Intergovernmental Fiscal Relations

HAROLD M. GROVES — LUTHER GULICK — MABEL NEWCOMER

While some cities are suffering financially from local mismanagement, "the generally rising competence of officials in posts of municipal responsibility," as the authors of this report point out, "has been one of the bright spots in the recent evolution of municipal government." Much of the blame for the financial predicaments of cities, in the opinion of the Treasury Department's Committee, "can be placed at the door of the states, in whose legislative councils cities have for years been scandalously under-represented."

Emphasizing the need for exploding "the widely prevailing notion that the general property tax, except for new exemption and rate limitations, is a crystallized institution and fixed for all time," the report suggests possible modifications of property tax laws and supplementary sources of financial support for municipalities.

THE cities have encountered many problems as a result of the movement of population and industry to the suburbs. This has created confusion in the field of public expenditure. Frequently the city provides services to suburbs which the latter are not equipped to supply, and sometimes the compensation is inadequate. Occasionally the city finances a system of rapid transit that is used chiefly to carry the metropolitan population to and from the city, and the latter is thus said to subsidize its own competition. Some wealthy residential districts (such as Beverly Hills within the City of Los Angeles, and Brookline, adjacent to Boston) or industrial areas with valuable business property (such as Hamtramck within the city of Detroit) are escaping their share of general costs—notably for welfare purposes—by separate incorporation. Sometimes these problems have been mitigated by the creation of special metropolitan districts. This working arrangement has important advantages, but it adds considerably to an already complicated pattern of government. The complication could be reduced, however, if the same metropolitan area were used to supply several services. Consolidation of metropolitan units is often the best solution, but it is difficult to achieve. Some Federal pressure in this direction, attending Federal-aid programs, would be quite warranted.

The Cities' Predicament

There can be little doubt that local governments, particularly city governments, are "in a bad way" from the fiscal standpoint. The recent depression caught them ill-prepared; many were obliged to borrow heavily to meet current expenses, and the refunding of maturing obligations was common. The spectacle of a city like New York, popularly regarded as the "gold coast" of a rich country, going through one financial predicament after another, obliged to adopt a sales tax, which its mayor had successfully attacked in Congress, and frankly conceding its future dependence on Federal revenues, is evidence enough that something is wrong in local revenue institutions. New York is not unique in its predicament. Most cities have been living from hand to mouth in the hope that something would turn up. And the attitude of municipal officials has grown increasingly critical. One of them writes that "in the field of taxation the city is practically powerless" and has been placed in a "financial and administrative strait-jacket"; another deplores the fact that "municipalities are facing a post-war period when local governments will find it necessary to go more and more to the central government for Federal assistance with its resulting placing of control."

No doubt much of the blame for these predicaments can be placed at the door of the states, in whose legislative councils cities have for years been scandalously under-represented. Cities have often shared very inadequately in newly developed state revenues, particularly in motor-vehicle tax revenues. More important, the states have undermined and strait-jacketed general-property-tax expansion, both with exemptions and with ceiling limitations.

The cities in some instances have their own mismanagement to blame for part or all of their financial troubles. But the generally rising competence of officials in posts of municipal responsibility has been one of the bright spots in the recent evolution of American government. It may well be that "the best managed of our cities are ahead of the Federal Government in the quality of their administration."

The cities have claimed the privilege, and some have found it possible, to develop some diversification of revenues. Thus we find, for example, municipal sales taxes in New York and New Orleans; a flat earned-income tax in Philadelphia; a license tax based on volume of business in Louisville and Richmond; a one-cent gasoline, one-cent bottle beer, and two-cent cigarette tax in Birmingham; and gasoline, automobile license, and cigarette taxes in Kansas City. But these developments involve piling taxes three deep in a number of cases, and they represent at best additional complications in a revenue system already highly complicated.

Recasting the General Property Tax

A major cause of the failure of municipal revenues on the score of adequacy is the unpopular general property tax. Although this tax proved the mainstay of local support for many years, it broke down badly during the recent depression and is under incessant political attack by state and local leaders. Besides many traditional faults, which need not be recapitulated here, the property tax, like the income tax, is attacked because its base is too narrow. The property-owning, lower middle class resent what they regard as the tax-free status of the proletariat. This attack gains strength because of the traditional interest in widespread home ownership. Finally, the property tax is resented because of its regressivity—the fact that it falls with greatest weight on relatively poor taxpayers.

The narrow jurisdiction of the municipality makes it essential to depend on a relatively immobile tax base for the major part of local revenues; and this points to the continuance of the

largest part of the local tax burden on real estate. But there are important possibilities of redistributing this burden among individual owners of real estate and their tenants.

What is needed, apparently, is some new source of local revenue which will (1) not overlap existing Federal and state taxes, (2) enable the localities to tap their own resources without running hat in hand to central governments, (3) cover all or a vast majority of the interested citizenry, (4) not be regressive. This is no easy assignment, but the following suggestions are recommended for consideration.

The property tax might perhaps be broken down into its elements and its uniform application to all owners on the basis of holdings be abandoned. One way of recasting the fragments would contemplate a collection from landlords in the nature of a service charge for local benefits to property, and a further collection, more personal in character, from occupants on their rental value of occupancy. The occupancy tax could be added as either a replacement or a supplement to the general property tax; and it might be introduced step by step on a gradual and experimental basis.

The property tax has suffered from notoriously weak administration. But the best possible assessment would fail to overcome the shortcoming of market value as a measure of taxpaying ability. It may be conceded that the owner of real estate producing no current income has some tax-paying ability. But it may still prove awkward to obtain the necessary cash for tax payments; and more important, the expected future income on which the market value is based may never be realized.

Rental Tax—Pro and Con

In view of these limitations, a good case can be made for shifting a part of the burden to current income from real estate; that is, the gross rental value of occupied premises. However, it may not be desirable to reduce current levies, in view of the fact that these may be partly capitalized and that there is no certainty that the owner would reduce rentals to his tenants if such a change were made. At least where there is need for more municipal revenue, a city might well give consideration to a tax on rentals, collected from the occupant. One advantage of such a tax is that, being in proportion to current income rather than expected future income, it will spread the burden over the various parcels of real estate in a different manner from the tax on capital values. Unused properties would be exempt. Also, the distribution between tenants and landlords would vary, since there is always some friction in the process of shifting. The occupants' tax would not avoid problems of migration and administration but it would probably encounter less difficulties in these respects than a local income tax. Finally a rental tax could make some allowances for individual ability to pay. The tax on home rentals might be adjusted to take account of size of family, and a progressive rate might be imposed. This would tend to offset the regressive tax on capital values. A business rental tax would be levied, of course at a flat rate.

Among the objections to a supplementary rental-value tax, would be the necessity for two valuations—rental value as well as capital value. This is not a simple problem, since many properties are occupied by their owners, and in other cases the actual rent paid must be adjusted to allow for special circumstances.

There are other objections to a rental tax. For instance, it would offer no answer (except in its possible graduation feature) to the criticism that much of the weight of the local tax system falls on housing, an area of expenditure in which the nation is trying to improve standards. Some concessions to housing, probably confined to the philanthropic element in housing, will probably be necessary. It is quite possible, too, that an occupancy tax might increase the cyclical fluctuation in city revenues. Nevertheless, the frequency with which such taxes have been used (in a highly formalized manner) by other countries, suggests that they have possibilities that may well be explored.

Alternative Proposals

Other ways of reaching the property base are the use of unearned increment taxes and the further development of special assessments. The latter have sometimes been used to excess, and the record of administration is not encouraging, but many cities have failed to develop their possibilities adequately. Many municipal services yield special benefits, and the cost might reasonably be covered in this way. Some municipalities could revise their public utility charges to cover costs, or even to contribute to the general treasury.

In any event, the municipality should be given greater freedom in the application of the general property tax. Rate limitations offer no constructive solution to the problem of financing local government or improving the property tax. Their proponents are indifferent to fiscal crises and counsel a resort to any action other than an immediate increase in real estate taxes. The right of the cities to tax their own citizens as they please within the property-tax area, primarily suited for local exploitation, should be generally restored, subject only to rules supplied by the state as to the general framework. Administrative assistance from the central units need not be precluded by such a development.

Property-tax exemptions have been too freely granted and too generously interpreted. Effective state supervision of property-tax administration or state assessment, if such central assistance cannot be developed, is needed to offset the pressure of special local interests.

The widely prevailing notion that the general property tax, except for new exemption and rate limitations, is a crystallized institution and fixed for all time should be exploded. Whether or not these specific proposals are received with favor, the whole subject of independent local revenues should be given fresh and bold reconsideration.

Other Sources of Financial Support for Municipalities

The Federal Government is in the best strategic position to cope with cyclical emergencies and should, even with a strengthening of local financial independence, continue to finance employment-creating improvements during such periods. Moreover, the Federal Government should enlarge the number of functions in which, because of a national interest, Federal support is given through grants-in-aid. State distribution of shared taxes (particularly motor-vehicle taxes) to cities has been scandalously niggardly. Federal payments in lieu of property taxes on Federally-owned property such as housing, should be more generous and dependable. While the retail sales tax as a local revenue source is quite objectionable because of its overlapping with central sources, its regressivity, and its jurisdictional complications, nevertheless, it may be worth considering as a last resort. Exemption of food might reduce regressivity, and some city might test the practicability of a personal exemption under this form of tax. As against the steady and extensive surrender of local fiscal independence, the city sales tax might merit further consideration. The major need is for a source of revenue which will enable the localities to tax their own resources independently. Much of the future vitality of local government in the United States depends upon the discovery and utilization of such a source.

Revenue Problems of Other Local Units

The impression should not be left that revenue problems of municipalities are confined to cities. Rural property owners in the early thirties presented a picture of very great distress; taxes had increased greatly in the twenties, farm income was drastically reduced, and farm values were also much depressed. The state-aid and shared-tax programs, and the assumption of highway costs by larger units of government, have in many cases given rural taxpayers substantial tax relief. With improved farm income during the war period, the property-tax load rests much more lightly on the average rural taxpayer than it has for many years. Another depression might, however, bring back some of the property-tax pressure with which farmers are quite familiar.

Depleted and under-endowed areas also have a place in the property-tax problem. These communities have usually been the recipients of large amounts of state and Federal aid, without which they could not have maintained even a semblance of a decent standard of public services. These areas offer many problems to the state, particularly those of land use, the reorganization of local government, and the perpetuation of obsolete communities.

The property-tax problem of depleted and under-endowed areas is fundamentally different from that of the cities. The former suffer because of inadequacy of resources with which to support government, the latter because of the inability to tax usually ample resources. The fiscally weak communities can be assisted by central governments principally through grants-in-aid. Some reorganization of governmental machinery, attending or preceding the grant program, also can be recommended.

From Volume II: Summary of the report on "Intergovernmental Fiscal Relations" submitted to the Secretary of the Treasury, January 1, 1943.

Community and School Facilities Integrated

IN AN article on "Community Schools Built in Wartime," appearing in the 1943 edition of "The American School and University" yearbook, John Lyon Reid of Franklin & Kump Associates, San Francisco, Calif., describes plans made for school facilities on the Chabot Terrace war housing project located near Vallejo, Calif.

Second in importance only to the need for adequate classrooms and outdoor play areas for the children were the provisions for meeting the adult needs of the community—needs springing in general from such activities as meetings, parties, lectures, dances, athletic events, and organized adult instruction and recreation.

The author enumerates several strong reasons for including space for these activities in the schools:

"The school is thereby able to bring the community closer to itself, one of the prime desiderata. There are many community activities which are barely distinguishable in kind from the activities of the child in school; and as the facilities exist for the child it is reasonable to subject these same facilities to multiple use. This obviates costly duplication of similar-use facilities at a time when cutting material and labor costs is of real importance. There are no other facilities inside the project or out which will take care of these community needs."

In making the site plan for the project, the location of the schools was given careful attention, particularly in view of the important community role they were expected to play. As the plans for the entire project—schools, commercial buildings, etc.—were prepared by the same group of architects,

MASTER SITE PLAN

The two elementary schools are near the center of the respective areas they serve. They are located on either side of road "A" so that a minimum number of children will have to cross this heavily trafficked road. The Intermediate School is located in the center of the project because its community facilities will be given heaviest adult use and because its pupils are drawn from the entire community. The schools are away from the heaviest traffic concentrations, which are around the main entrance roads and the commercial and administrative areas

Chabot Terrace War Housing Project.

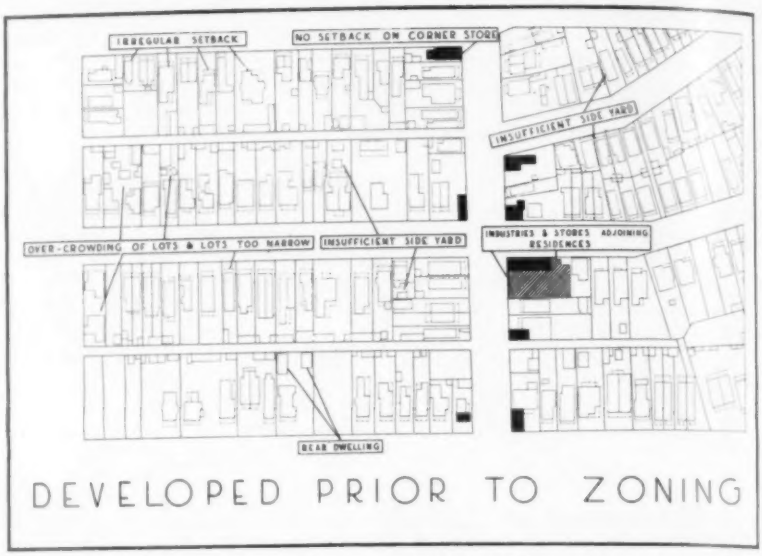
an unusual opportunity was at hand to achieve a carefully studied relationship between the housing, commercial, and school areas. Because of the size of the project, the number of elementary school children, and the need for distribution of the community facilities, it was decided early to have two elementary school sites. The two schools were placed near the center of the respective areas they were to serve and were proportioned in size to these areas. The Intermediate School was located as near practicable in the center of the project, since the community facilities it was to contain were more complete than in the other two schools, and since it was to be given the heaviest use by the adults; likewise its pupils were to be drawn from the entire community.

An example of the integration of community and school facilities is the big multi-use room or assembly hall—112 feet by 56 feet, connected to the classroom units by an open corridor—which was included in the plans for the Intermediate School. This unit was planned to be used almost equally by the school children and the adults, so it was located to be accessible to both groups of users. It was separated from the classroom units, so that adults may use it during school hours without interfering with the classroom activities. There is a stage at one end, and the room is flanked by a small spectators' gallery and locker-shower rooms for boys and girls; behind it are band and practice rooms, located away from the classrooms because of the noise. This entire group of rooms constitutes a unit the use of which is varied. Athletics and games, theatricals with the band and practice rooms serving as dressing rooms, large dinners with the meals served from the nearby kitchens, lectures, movies, and dances, can all be accommodated.

Although certain features of the plans had to be scrapped, because of wartime restrictions on construction, the plans in themselves have great significance as regards post-war trends. In the words of the author:

"The shift of the emphasis in education from scholarship to serviceable knowledge and skills, mental and manual, has been accelerated by the war. The war, too, has made us realize that our pre-war isolationism will not suffice in a post-war world. Our education will be correspondingly broadened to deal with our own complex civilization, that of our neighbor nations, and our interdependence with them. Of great importance will be the form and character of the school buildings to house these expanded activities, and the measure of integration of the school program with the life of the community. Out of conditions created by the war can be glimpsed the trend of planning, construction, and even of the evolution of our concept of the community."

What Happens in Unzoned Areas



ACCLAIMING the widespread benefits that zoning affords to a municipality, in a recent report entitled "It's Your City Plan!", the City Planning Commission of Wichita, Kan., addressed the people of that city in part as follows:

"While you were probably not one of those persons who appeared at a public hearing in 1921 and denounced zoning as a newfangled socialistic trend which would not permit a person unlimited use of his land regardless of the damage to the surrounding neighborhood, you now realize that this attitude has been replaced by an increasing demand for more zoning protection. The war boom has accelerated this demand in the good residential districts on the periphery of the city where protection is especially needed because the territory just outside the corporation line is unzoned.

"While it is impossible to cite statistical data as to just how property uses would be intermingled and the land crowded if the zoning ordinance had not been in effect since 1921, the majority of citizens realize that their residential sections are *more desirable* and their commercial and industrial zones are *more convenient* and more valuable because of zoning. Commercial and industrial uses are no longer scattered indiscriminately throughout residential districts, but are now definitely located in areas where this type of development *logically* belongs. Uniform building lines have improved appearance, health, and safety; and large lots, secured through both zoning and subdivision regulations, have tended to *protect the value of property* and insure more desirable living conditions.

"The accompanying plate graphically shows the chaotic development that results in typical sections of cities that do not have zoning protection."

Airways to Peace

WE have always known two kinds of geography. Nature drew the oceans, continents, mountains, rivers, and plains. Men etched in cities and national boundaries. For our well-being, we have tried to harmonize natural and man-made geography.

But the modern airplane creates a new geographical dimension. A navigable ocean of air blankets the whole surface of the globe. There are no distant places any longer: the world is small and the world is one. The American people must grasp these new realities if they are to play their essential part in winning the war and building a world of peace and freedom. . . .

Vision and courage will be as necessary for the winning of the peace as for the winning of the war. We must learn that narrow nationalism and racial and religious intolerance are suicidal. We must understand that economic freedom is as important as political freedom. We must accept our full responsibility for America's share in the tremendous tasks of reconstruction.

Peace must be planned on a world basis. Continents and oceans are plainly only parts of a whole seen from the air. And it is inescapable that there can be no peace for any part of the world unless the foundations of peace are made secure throughout all parts of the world. Our thinking in the future must be world-wide.

WENDELL L. WILLKIE.

(From the August 1943 issue of the *Bulletin of the Museum of Modern Art*, New York.)

Complete Skid Protection in Michigan's Capital City

Eight trucks with self-powered spreaders form the nucleus of Lansing's skid protection program. Officials prefer using clean sand and calcium chloride mixed at the rate of 200 pounds per cubic yard. Abrasives go on the entire street and not just certain danger sections. "Escort" services are provided to trucks going to war plants during especially heavy snowstorms.

Palmer H. Slack

By PALMER H. SLACK
Assistant Director of Public Service
Lansing, Mich.

FULL LENGTH skidproofing of main thoroughfares was inaugurated several years ago in the city of Lansing as the natural outgrowth of our determination to provide the utmost in ice-control service. Halfway measures, we decided, were not enough if the traffic of this busy city was to receive the protection it needed and which it had a right to expect.

In protecting a city against fire, the location of water hydrants is not confined to intersections alone, for fires often have a way of starting in the middle of a block. Property damage, injuries, and deaths, due to skidding on icy pavements, also have a way of happening in between the islands of safety provided in places where only "spot" treatment is employed.

Organization

Now that more trucks than ever, loaded with the vital ingredients for Lansing's many war production lines, are moving over the city streets, we are particularly gratified that our ice-control system functions smoothly to keep them rolling safely and without delay. In enabling war workers to reach their jobs in one piece and on time, our skidproofing program makes another valuable contribution to the war effort.

While general operation of the winter maintenance system is directed from the central yard, and the equipment is dispatched from there, we have divided the city into four sections—each of which is made the fixed responsibility of a definite group of our maintenance forces.

Information on weather expectations is assembled at the central yard from weather bureau forecasts, barometric and temperature readings, and from reports of street conditions telephoned in by public transportation employees, truck drivers, police department and citizens. The yard superintendent is on 24-hour call, and an emergency crew remains on duty all night to take care of situations which may arise before the regular organization can swing into action.

Eight trucks are equipped with self-powered mechanical spreaders; and four smaller trucks, from which the abrasives are spread by hand, are used to augument the mechanical equipment Each of these trucks is manned with a driver and one laborer who controls the spreader and keeps the abrasives moving into the feeding hopper.

A 500-cubic yard stockpile is built up in early fall to insure a sufficient quantity of desirable freezeproof abrasive for skidproofing.

Abrasives

Early in the fall we ensure the source of a sufficient quantity of desirable sand and build up a 500-cubic yard stockpile at the central yard. A stock of this quantity is then maintained throughout the season. We prefer sand to cinders for use in city ice-control work. However, the sand must be clean and free from deleterious material. Dirty sand makes the street surfaces unsightly and also creates a sticky mess after melting ice has carried it into the gutters.

Treatment of Abrasives

Even since ice-control operations started in Lansing many years ago, we have treated the abrasives with flake calcium chloride to make them anchor fast and "stay put" when

Only 60 Minutes

REACTION AND SETTLING TIME REQUIRED

WITH GRAVER REACTIVATOR!

This equipment reduces the usual reaction and settling time . . . from 4 to 8 hours . . . to less than 1 hour

The Graver Reactivator is designed to both soften and clarify a water supply or perform either function separately, and embodies an improved process of coagulation with Upward Sludge Filtration. Experiences of Reactivator users show that even when treating extremely hard and turbid waters, treated water hardness did not exceed 3 grains per gallon and turbidity did not exceed 5 p.p.m. The Graver Reactivator performs this operation in less than 60 minutes. Furthermore, this equipment requires a minimum amount of operator attention and provides important economies in initial cost as well as in operating expense.

Graver Reactivators can be designed and built in any size to meet your individual requirements. Graver engineers will gladly discuss your needs with you and submit quotations without obligation.

Write Graver — today.

GRAVER TANK & MFG. CO., INC.

4809-35 Tod Avenue, East Chicago, Indiana

NEW YORK CATASAUQUA, PA. CHICAGO TULSA

GRAVER *Water Conditioning Equipment*

I-40-W

Adequate mixing of abrasive and calcium chloride can be achieved by scattering the chemicals on the cinders and moving the combination with a Barber-Greene loader.

spread. Of course, the treatment also keeps the abrasives loose and unfrozen in the stockpile, and permits them to flow freely from the truck bodies into the mechanical spreaders. The saving in labor and the added speed of operation are considerable factors.

Treatment is made at a rate of 200 pounds of flake calcium chloride per cubic yard of sand, and thorough mixing is accomplished as the damp sand and chemical are stockpiled by means of a Barber-Greene bucket loader.

In our estimation, based on long-time use, calcium chloride does the job that is required more effectively and more economically over-all than any other treating material. During the winter of 1942-43, we used 525 tons of calcium chloride for treatment of 4,500 cubic yards of sand spread for ice-control purposes.

Of the 150 miles of paved streets in Lansing, some 80 miles, or over one-half the mileage, is on the full-length skidproofing schedule. This includes all state trunk lines, business streets, bus lines, fire routes, and streets that serve the principal manufacturing plants.

Operation of System

When an ice storm strikes, one spreader-equipped sanding truck is immediately dispatched to thoroughly treat the 13 bridges on the street system. In the meantime, the other truck crews with mechanical spreading equipment have started on their prescribed routes for full-length sanding, while the hand-shoveling crews follow through to treat the intersections and other spots of particular danger. The full length sanding operation consumes on the average about 3 cubic yards of abrasives per mile of pavement.

"Escort" Service

During the past winter, when ice conditions were especially bad, skidproofing measures were extended to some of the side streets and to alleys that serve war manufacturing plants or are heavily used for trucking. Another service feature introduced last winter was our "escort" service to trucks laden with war materials which arrived at the city limits before our normal skidproofing schedule had provided complete protection. In these cases, the trucks were met at the city line when conditions warranted by a special sanding crew which preceded the truck through the city and sanded all pavement sections that had not already received adequate treatment.

Plowing and Skid Protection

When snow-plowing is in progress, we do not wait until the snow removal is completed and an icy pavement condition begins to develop. Our sanding trucks are assigned to follow-up the snow plows as closely as feasible to provide skid protection as soon as possible after the streets have been cleared of snow. Since the plows operate at much slower speeds, one sanding unit is usually able to take care of the skidproofing behind five or six plows.

In addition to our street ice-control program, we also protect pedestrians in the downtown area by treating sidewalk intersections with the sand-calcium mixture. Straight calcium chloride, without abrasives, is used to soften the ice for quick removal from the steps and sidewalks around public buildings. For miscellaneous skidproofing purposes, our department also furnishes calcium chloride treated sand to the Park Department and other divisions of the municipal government concerned with the protection of motor vehicles and pedestrians at locations not covered by our own department.

Lansing's winter street-maintenance program is administered by Glenn P. Manz, Director of Public Service, and is directly supervised by the writer. Stanley Sprowss, Yard Superintendent, now deceased, was in charge of operations for many years.

Part-Time War Work by City Employes

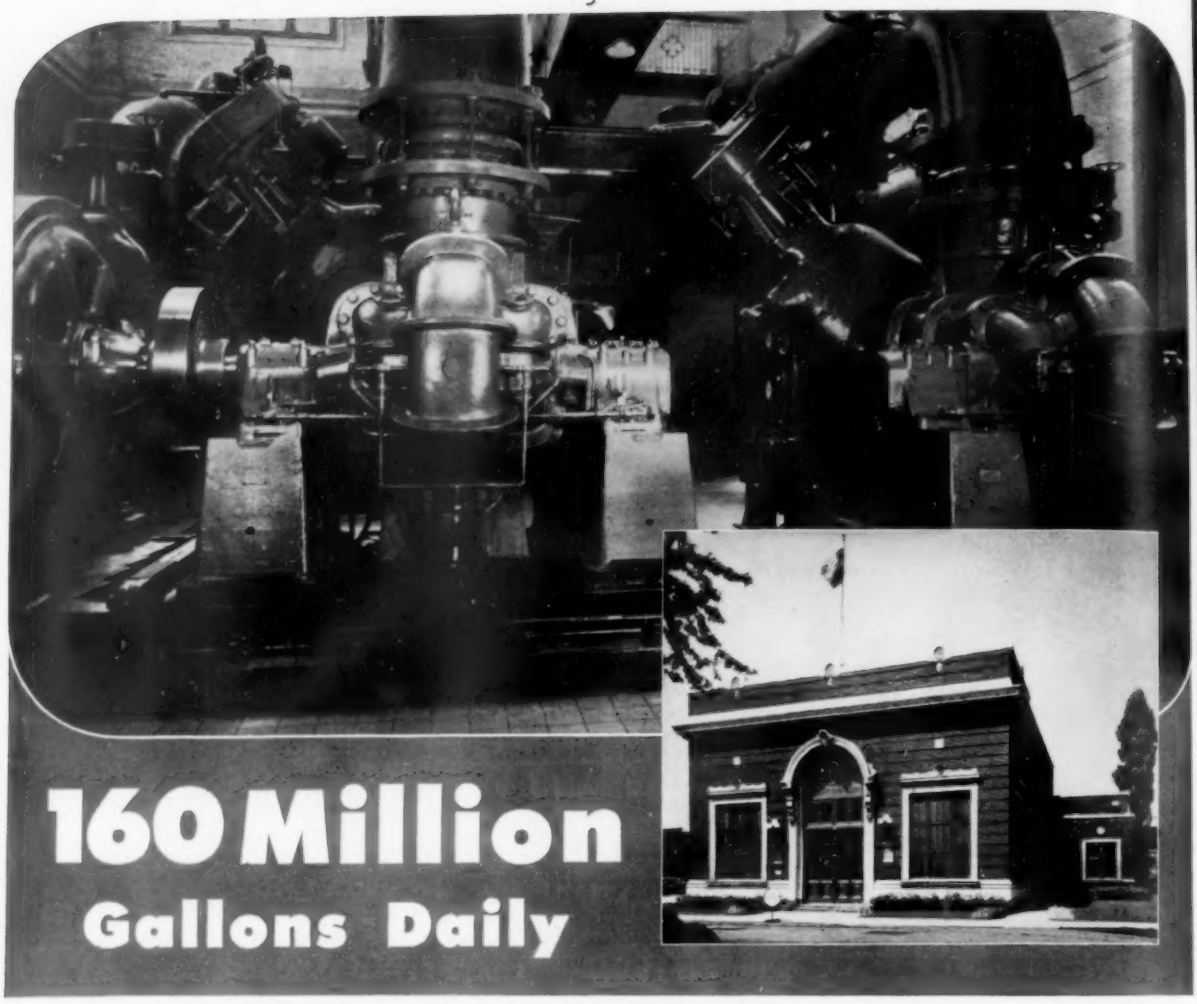
Spare-time job plans to bring victory sooner by utilizing every source of manpower and womanpower in the nation are being set up in cities in every section of the country, the American Municipal Association reports.

City officials of San Diego are cooperating with local aircraft plants in providing "half shifts" of city employees who work four hours each night at the close of their regular working hours. Under arrangement with the city's public schools, more than 300 boys of 16 and 17 are working as part-time plane builders in an aircraft plant. The boys work four weeks and attend school four weeks.

Employees of New York City and South Portland, Me., are permitted to accept part-time employment in addition to their regular work, provided such employment does not interfere with their regular jobs.

Firemen in South Portland, Me., are engaged in private fire protection work at a large shipyard in the city on their off-duty hours, and Portland, Me., permits firemen to work as taxi drivers during their time off.

A number of Cleveland city employees are now working four-hour split shifts in their spare time for various private industries to help alleviate the manpower shortage in the community. The Civil Service Employees' Association is acting as a clearing house for civil service employees of the city who wish to work split shifts and for employers desiring to obtain workers on this basis.



Thomas Jefferson Pumping Station
uses four Fairbanks-Morse thirty-inch, double-suction pumps

A group of four Fairbanks-Morse thirty-inch, double-suction, single-stage, split-case pumps gives the Thomas Jefferson Pumping Station in Chicago a total capacity of 160,000,000 gallons of water daily. Installation of these pumps departs from the conventional in that suction is horizontal and discharge is vertical. Water is taken from Lake Michigan at the Wilson Avenue Crib, brought through five miles of tunnel and discharged through twenty-three miles of feeder mains. Each of these big pumps is driven by a 1200 hp. motor.

Modern pumping equipment such as is found at the Thomas Jefferson Pumping Station, saves the taxpayers of any municipality real money. In many cases, old pumps, even if as good as when installed, exact at least a 10% power cost penalty. At that rate, new pumps soon pay for themselves.

Comparatively few cities require pumps with such large capacity as Chicago; but large or small, Fairbanks-Morse builds the right pump for the job.

Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago, Illinois.

BUY WAR BONDS

FAIRBANKS-MORSE

DIESEL ENGINES · WATER SYSTEMS
PUMPS · SCALES
MOTORS · STOKERS
GENERATORS · FARM EQUIPMENT
RAILROAD EQUIPMENT

Pumps

Levelling the Low Pressure Areas

Water-treatment plants, reservoirs, and various types of wells, receive the lion's share of attention, particularly during these wartime days when old man Supply, senior partner in the firm of Supply and Demand, seems to be getting such a kicking around. However, that is not the situation in Ft. Wayne. This city outgrew its distribution system the way a small boy outgrows his pants, and it is taking some careful engineering to retailor these water-works "trousers." This is the way the city is doing it.

By W. KEHOE
Chief Engineer, City Utilities
Ft. Wayne, Ind.

THE city of Ft. Wayne, with a population of 125,000 has, for the past several years, experienced the normal increase in population generally expected of progressive municipalities of its type and character.

In 1940, with the impact of war just beginning to be felt, a condition of low water pressure arose in the distribution system serving the southern part of the city that threatened both the health of the people and the welfare of the industries lying in the area. The territory covered was in the residential, suburban and manufacturing district of what is described as our southeastern zone.

Extensive Low Pressure Areas

As soon as this was discovered our engineers began an investigation of the entire area to learn how extensive this condition was. Results obtained from tests proved that a very serious condition did exist, particularly from a sanitation standpoint. During peak loads in the summer of 1940 pressures of 8 pounds per square inch actually existed in many portions of the area, resulting in water being unavailable in second story residences. Although none had been actually measured, we strongly suspected that negative pressures existed. Water-works men realize the dangerous complications that this situation presents.

As is well known to men who have faced this problem, the failure to maintain a positive pressure introduces the possibility that the contents of basins, bathtubs, and lavatories may be drawn into the water system when valves or faucets are opened. Water which might be drawn for fire fighting apparatus would further aggravate the situation by producing the same negative pressure, up to the point of discharge into the larger laterals, consequently creating identical pressure drops along the line.

There was no relief in sight. As far as water consumption was concerned the demand showed every indication that it was going to keep right on growing. The established industries are varied and constantly expanding their facilities. The existing low pressure situation was definitely not going to correct itself.

Methods Studied

In analyzing methods to alleviate this situation the Engineering Department of the City Utilities delivered a report on five separate possibilities. They were as follows:

The installation of a 24-inch cast iron water-feeder main and the construction of new 16-inch and 12-inch mains. These lines would complete four new circuits and boost pressures in the entire southeast zone without materially increasing pumping costs.

Installation of an elevated tank.

Installation of an underground storage tank.

Increasing the pumping capacity at Reservoir Park, a reservoir with a present capacity of 4.8 mgd.

Installation of a booster pump in the affected zone.

Of these five alternatives, the first appeared most economical from a long-range operating standpoint. The permanence of a feeder main outweighed the disadvantages of replacements and the added operating personnel that would have been required in the other alternatives.

Plans and Specifications

Accordingly plans and specifications were drawn and by the end of 1941 were submitted to the Ft. Wayne Board of Works for their approval. These specifications called for the cast iron pipe to be of 150 pounds per square inch type, Super DeLavaud, in 18-foot

LEFT: The value of planning for the future is brought sharply into focus by this photograph of the main being tunnelled under the railway. The depth was selected so that a future underpass will not require relocating of the main.

RIGHT: A general view of the 20-inch line laid and calked ready for back-filling.

New low-cost method puts it in reach of every community

EVERY home in your city—every shop, every factory—can enjoy soft, sparkling water at the turn of a tap. Recent developments by Permutit* make it more practical than ever.

Your city may best be served by a zeolite water softening plant, a Spaulding Precipitator for cold lime softening or by the new cold lime method—the "Spiractor". Permutit equipment for these processes is modern and economical.

Better water will contribute heavily to the happiness and prosperity of post-war cities. Plan it now for *your* community. Write for details to The Permutit Company, Dept. G3, 330 West 42nd St., New York 18, N. Y. In Canada: Permutit Co. of Canada, Ltd., Montreal. *Trademark Reg. U. S. Pat. Off.

PERMUTIT

WATER CONDITIONING HEADQUARTERS

lengths. The quantities involved approximated 9,000 feet of 24-inch, 4,000 feet of 16-inch, and 5,000 feet of 12-inch, all with standard connections. U. S. Cast Iron Pipe was selected.

The valves were specified to be of cast iron body, fully bronze mounted or trimmed, bronze stem, double disc gate valves. The 24-inch valves were to be equipped with a 4-inch bypass valve and with gearing. All valves were required to have stationary stems and operating nuts designed to open clockwise or to open when the wrench is turned to the right. The clear waterway with the valve open was specified to be the equivalent opening of the connecting pipe. All valves were to be designed for a working pressure of 150 pounds per square inch.

It further was specified that all 16-inch and 24-inch valves will be in a valve pit of reinforced concrete with a manhole to facilitate repairs and operation of the valve.

Construction specifications called for all pipe to have a cover of 5 feet and to be laid to grade on solid bottom cut true for the greater length of pipe, permitting a 4-foot space around bell holes for lead caulking the joints.

FWA Assistance Received

Applications were then made to the newly created Federal Works Agency and a grant of $85,000 was made towards the estimated cost of $177,700 for the feeder main. Application also was made for procurement of material to WPB and an A-1-J rating was granted early in 1942. Although bids were advertised on May 12, the present rating was insufficient to procure the materials necessary for construction. Accordingly the matter of priorities was again taken up with WPB and the city was granted an A-A-5 rating on pipe and A-A-3 rating on valves, lead, and jute. The work was again advertised for bids on March 22 of this year, and an award was made to Santucci Construction Co., Skokie, Ill., to construct feeder mains for $169,992. Class 150 centrifugally cast U. S. Cast Iron Pipe and Iowa gate valves are being used.

Complete in January, '44

This work was started in May of this year and should be complete late in January 1944. When finished, it will enable us to supply water throughout the entire Southern Zone at around 50 pounds per square inch.

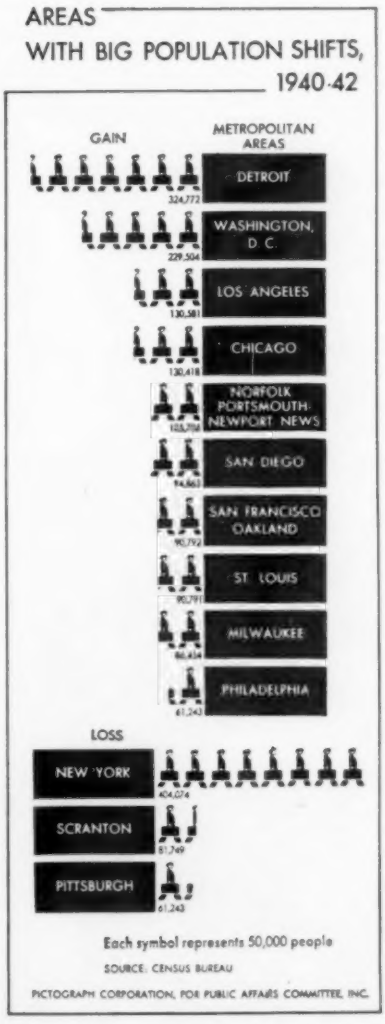
Population Shifts—Wartime and After

THIS chart, showing the Census Bureau's estimates of gains and losses in some of the metropolitan areas that experienced big populations shifts from 1940 to 1942, is reproduced from Public Affairs Pamphlet No. 83. This latest addition to an important series is entitled, "War Babies, and the Future." The author is William Fielding Ogburn, Professor of Sociology of the University of Chicago.

Dr. Ogburn sounds a somewhat optimistic note by calling attention to the fact that modern wars, for all their destructiveness, only raise the death rate of the warring nations by some 25 per cent. He estimates that in 1942 the total deaths of all combatants was between 1,500,000 and 2,000,000; but in peacetime the countries at war would have lost in that year about 7,000,000 by death.

"There can be no question that the present war is causing us to lose by death a very select group," Professor Ogburn admits. But he points out that "this killing of the best does not cause any marked worsening of our racial stock. . . . It is only a change in the germ plasm which affects racial stock."

Although America's war losses are not likely to affect population greatly, America must gird itself for a period of declining population, the pamphlet points out. America's increasing birth rate—from 1933 through 1942, our best "boom" year for babies—is really only an upward fluctuation around the downward trend of the birth rate that began 75 years ago, according to Dr. Ogburn.



We can look forward to an immediate decrease in births in the United States during the height of our activity in the war, when more than 10,000,000 men are away from home, which will be offset only in part by another spurt in population growth in the post-war period.

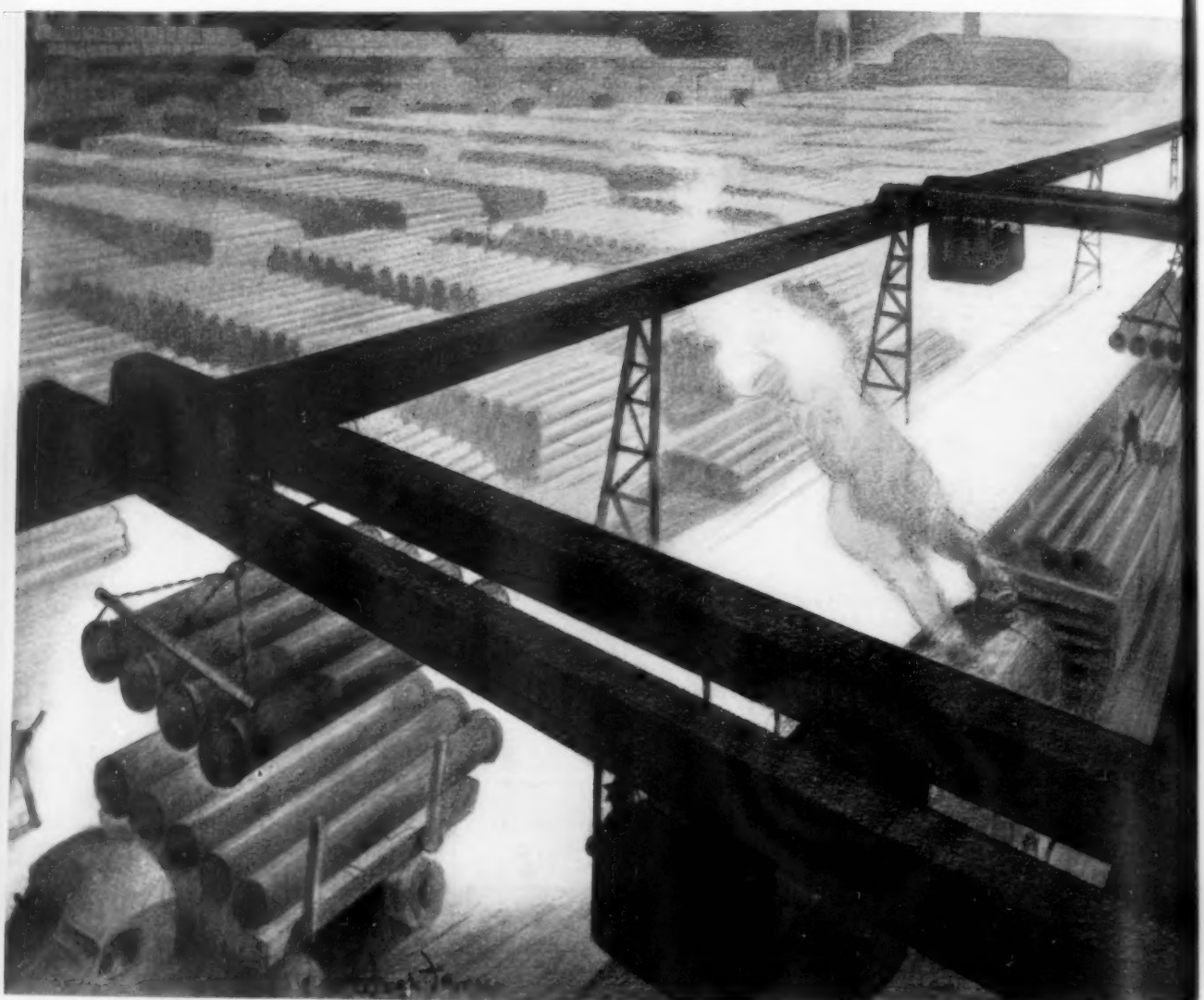
Discussing population shifts within the United States, Professor Ogburn says in part:

"War stirs up the population and starts them moving. The question naturally arises, now that we are thinking in terms of the end of hostilities, whether these peoples will stay in their new homes or return to their old ones. It certainly seems probable that a good deal of war industry will be dismantled. Much retooling is expected. Automobiles gave way to airplanes. But automobiles will come back, and airplane production will hardly continue after the war at a rate of 5,000 to 10,000 planes per month. The rubber factories may remain, however. It looks as though the backward trek of population will not be 100 per cent.

"Let us analyze this problem a little further. We have seen that people followed the factories, and we have noted that the factory expansion was often in localities where manufacturing had been growing most rapidly during the past decade or two—the South, the Great Lakes region, and the Pacific Coast. It would seem reasonable, therefore, to expect the localities that previously had a strong trend toward increasing factory production to hold a larger proportion of their new population than areas where manufacturing had been declining or growing at a slow rate. Metropolitan areas like San Diego, Corpus Christi, Dallas, Jackson, Jacksonville, San Antonio, Charleston, Columbia, Columbus (Ga.), Mobile, Washington, Galveston, are very likely to be greater centers in the years to come because of the war."

For Delivery Now

Stacked on the storage yards of our several plants are ample stocks of cast iron pipe i sizes most commonly used, ready for immediate delivery. Standard fittings are also quickl available. Where requirements cannot be supplied from stock on hand, we are in position t produce them promptly. In connection with postwar plans you can rely on securing Super-d Lavaud or U. S. pit-cast pipe *when you need it,* as our facilities for pipe productio have not been reduced in spite of our past and present contribution to the war effort



pe storage and shipping yard at one of our plants, drawn by Hugh Ferriss.

UNITED STATES PIPE & FOUNDRY CO.

General Offices: Burlington, New Jersey. *Plants and Sales Offices throughout the U. S. A.*

42 More Small Municipalities Report on Post-War Planning

This is the ninth installment of the replies which* THE AMERICAN CITY *has been publishing since November last to an inquiry sent to mayors and city managers as to post-war planning by their respective municipalities. Starting with the larger cities, the questionnaire has gone successively to smaller places. The replies this month and in the July and August issues are from municipalities in the 10,000-15,000 population range.

The questionnaire form, identical with that sent to the larger cities, asked the following questions:

1. *"Has your city begun to plan for post-war public works or other municipal improvements to be undertaken when materials and manpower are available?"*
2. *"If so, what are the principal types of projects contemplated in these plans?"*
3. *"By what departments of the municipal government are such plans being made?"*
4. *"Does your municipality have a planning commission? If so, what responsibilities and powers does that agency have as to post-war planning?"*
5. *"Is your municipality setting aside any reserve, in war bonds or otherwise, for post-war public works?"*

The small percentage of municipalities which answered "No" to quetsion number 1 are not listed. The accompanying synopsis gives the answers to question 2 to 5, with the name and title in each case of the official furnishing the information.

Niles, Mich.

W. F. MORGRIDGE, Mayor:
2. Intercepting sewer system; sewage-treatment plant
3. Engineering Department
4. No planning commission
5. Yes

Norfolk, Nebr.

A. W. BREYER, Mayor:
2. Sewerage disposal plant; municipal swimming pool; new city hall; new grand stand; athletic field park; additional paving
3. City Engineer and Council
4. No
5. No

Northbridge, Mass.

DAVID B. LANE, JR., Chairman, Post-War Planning Committee:
2. Sewer bed; highways; water system
3. Post-War Planning Committee consults with all departments of the town
4. Yes. Most members of Post-War Planning Committee are members of Planning Board
5. Yes.

North Plainfield, N. J.

H. W. SCHAEFER, Mayor:
2. No specific projects
3. Finance Department
4. No planning commission
5. Yes. $25,000 in war bonds

North Platte, Nebr.

S. W. THROCKMORTON, City Clerk:
2. Cleaning and replacing sanitary sewers where necessary; surface drainage project
3. Water and Street Departments
4. No planning commission
5. Yes

Old Forge, Pa.

JAMES TEDESCO, Burgess:
2. Paving of streets; installation of concrete curbing and sidewalks
3. Department of Public Works
4. No planning commission
5. No

Oneida, N. Y.

A. T. ERNENWEIN, Commissioner of Public Works:
2. Sewers; pavements; incinerator; municipal building; library
3. No plans prepared at present, except large sewer job which could be started at short notice
4. Yes. Advisory
5. No

Oneonta, N. Y.

FRANK M. GURNEY, City Engineer:
2. Paving, drainage, garbage disposal; public buildings
3. Department of Engineering
4. Yes. Makes recommendations to Common Council
5. No, because of the fact that in 1945 all bonds of this City will have been paid, and a definite amount will be set up each year for capital improvements on a pay-as-you-go basis

Orangeburg, S. C.

L. F. THEILING, City Clerk:
2. Primarily improvements to water and light plant, and line extensions and repairs
3. Orangeburg Water and Light Plant
4. No planning commission
5. Yes, war bonds

Painesville, Ohio

C. S. FULLERTON, City Manager:
2. Garbage and refuse incinerator; sewage disposal plant; combined city hall, police and fire station, and auditorium; street paving; airport; light plant improvements
3. No plans started. General plans will probably be studied by Planning Commission augmented by citizen groups and submitted to council and management
4. Yes. See 3 above
5. Yes

Panama City, Fla.

C. E. SWANK, City Manager:
2. Sanitary sewers; paving; bridges; recreational pier; fire stations; water softening plant; water plant additions and system extensions
3. Administrative
4. No planning commission
5. No

Park Ridge, Ill.

L. E. FLEISSNER, City Clerk:
2. Sewers; public buildings
3. Building Department
4. Yes. Advisory
5. No

Peru, Ind.

J. O. MILLER, Mayor:
2. Additions and extensions to our present utilities; improvements in our flood control district
3. Executive Branch
4. Yes, in connection with the Peru Industrial Association.
5. The Civil City is planning to set up an improvement fund for such purposes

Phoenixville, Pa.

NORMAN G. YOUNG, Borough Manager:
2. Storm sewers; recreational areas
3. Borough Manager
4. No planning commission
5. Yes

Portsmouth, N. H.

CHARLES M. DALE, Mayor:
2. Streets
3. Planning Board
4. Yes. Advisory
5. No

Redlands, Calif.

GEORGE S. HINCKLEY, City Engineer:
2. Road construction; flood control; water main extensions; public buildings
3. Engineering and Planning Departments
4. Yes
5. Yes

Redwood City, Calif.

FLOYD GRANGER, Mayor:
2. Drainage; bridges; street and road construction; acquisition of land for recreational facilities; replacement of equipment
3. Engineering, Recreation, and Public Works Departments
4. Yes. Advisory
5. Yes. War bonds

Richmond Heights, Mo.

FRANK R. NOHL, City Engineer:
2. Street paving and repairs; storm and sanitary sewers; sidewalk construction; storm water channel
3. Only preliminary studies have been made, and not far enough along to be presented
4. Yes. Advisory
5. Not as a reserve fund

Rochester, N. H.

WALTER H. WOOD, Mayor:
2. Enlargement of water supply system; sewage disposal plant; new highway and water department buildings; enlargement of fire alarm system; new sidewalks and street pavements
3. City Planning Board
4. Yes. The Planning Board has the responsibility of making a master plan for the city and making recommendations to the Council
5. Reserve funds for future expenditures cannot legally be made by municipalities

St. Charles, Mo.

RICHARD W. HALTEMAN, City Engineer:
2. Street and sewer improvements, including sidewalk, curb, and gutter; street signs; storm and sanitary sewers; new public park and parking areas; substations for Fire Department
3. Engineering Department
4. No planning commission
5. Yes, also bonded indebtedness is low

Weather Forecast

THE BRIDGEPORT TELEGRAM

Fairfield County's Morning Newspaper

VOL. LI, NO. 283 — BRIDGEPORT, CONN. WEDNESDAY MORNING, NOVEMBER 25, 1942 — 30 Pages

City to Repair Main Street Block Swept by $350,000 Fire

REDS WEAKEN GERMAN HOLD ON STALING

TUNISIA FIGHTING SPR

STOCKS DAMAGED BY FIRE, WATER IN SEVERAL STORES

Interiors of Sturdevant and Franklin Buildings Gutted by Flames.

TAX RECORDS SAVED

Firemen Remain at Scene Wetting Down Ruins—Seven Firemen Hurt.

Firemen Pour Water Into Fire-Swept Block

2 More Plants Certified For Treasury 'E' Awards

JEFFERS DEMANDS SAVING IN RUBBER

OFFICE OF THE COMPTROLLER
DEPARTMENT OF FINANCE
CITY OF BRIDGEPORT, CONN.

December 18th, 1942

Microstat Corporation of New England
Box 308
Norwalk, Connecticut

Gentlemen:

We presume you have had notice of what could have been a very serious catastrophe as regards our vital records and documents. We had a fire in one of our buildings last Wednesday, November 25th.

It brought back to me the many actual statements that your company made as to the importance of our microfilming-- not only for posterity but for the purpose of safety. You can just imagine what a comfort and complete satisfaction it was to me to know that stored safely away in a safe deposit vault were tiny films on which were recorded our vital documentary material-- and that because of a special insurance policy issued by the Atlantic Mutual Insurance Company, your company would have in our office exact replicas of the material lost, at no cost to us.

I also wish to congratulate you and express my appreciation for the prompt manner in which your insurance company appeared on the scene. In conclusion, I wish to add one more statement. If I can ever be of any benefit in giving my hearty recommendation to every municipality as well as business concern, please do not hesitate to call upon me.

Cordially yours,
Perry W. Rodman
Comptroller

PWR:MB

Wisdom of Microfilming

NOT EVERY CITY that microfilms its valuable public records receives as prompt confirmation of its wisdom as did the City of Bridgeport, Connecticut.

On November 24, 1942, a $350,000 blaze gutted the interior of the Sturdevant and Franklin municipally owned buildings in which Bridgeport's engineering drawings were stored. The City of Bridgeport was fully protected. How? By Microstat's Insurance Coverage that pays the cost of making full size reproductions in the event of loss. This also covers loss against flood, tornado, sabotage, deterioration, etc.

It is not necessary to wait until the cessation of war to have your city's records microfilmed due to frozen equipment. The MICROSTAT CORPORATION operates on a service basis. We microfilm your files on your premises without fuss, bother or investment in equipment and issue an Insurance Policy valued at ten times the cost of the original records and drawings, without extra charge.

We have executed service contracts for hundreds of representative Industries and Governments, and are well equipped to give prompt and efficient service. Telephone or write our nearest branch for complete information.

MICROSTAT CORPORATION

★ **National Headquarters** 18 West 48th Street, New York 19, N. Y. ★ **Licensee Branches Coast to Coast**

★ San Francisco San Diego Los Angeles Milwaukee Chicago Detroit Cleveland Washington Pittsburgh Philadelphia New York Norwalk Boston Mexico City

MICROSTAT
REG. U. S. PAT. OFF.
PRECISION MICROFILMING

Sanford, Fla.
H. N. Sayer, Manager and Clerk:
2. Sidewalk construction and repair; resurfacing paved streets; reconstruction of storm and sanitary sewers; new swimming pool; new boat basin; water main extension; sanitary sewer system extension; new paving
3. Engineering Department
4. No planning commission
5. Yes

San Buenaventure (Ventura), Calif.
Richard H. Smith, City Manager:
2. Water supply development; municipal airport; beach park; highways; shore drive parkway and streets; flood control; storm drains; civic center
3. Engineering and Water Departments; Mayor and Council
4. Yes. Advisory
5. No reserves provided as yet

Santa Rosa, Calif.
J. A. Tedford, City Manager:
2. Enlargement and extension of present sewer system; enlargement of disposal plant, water system, water-treatment plant; civic auditorium; improvement of parks and playgrounds
3. Engineering Department
4. Planning Commission is in the formative stage. Assisting and recommending to the Council post-war projects
5. Yes, in war bonds

Sapulpa, Okla.
Fred M. Boone, City Manager:
2. Sewage disposal plant; street paving; community building for live stock and poultry shows and sales; addition to city hospital; new city hall and auditorium
3. Managerial and Engineering Departments
4. No, but the Chamber of Commerce has Post-War Planning Board, which advises and works in conjunction with city officials
5. No. State laws do not permit

Sarasota, Fla.
J. E. Richards, City Clerk:
2. Sanitary sewers; water plant expansion; bridge repairs
3. Commissioner of Public Works
4. No planning commission
5. Yes

Shelton, Conn.
J. Stirling Edwards, City Clerk:
2. Interceptor sewer; disposal plant
3. ——
4. No planning commission
5. No

South Charleston, W. Va.
L. H. Oakes, Mayor:
2. Improved surface sewer system; additional paving; playgrounds
3. Building and Grounds, Engineering and Recreation Departments
4. Yes. General improvement planning
5. Reserving bond issues until end of emergency

South Milwaukee, Wis.
H. W. Daehling, City Clerk:
2. Extension of water plant system at the pumping station; storm sewers; water laterals
3. Water Department; City in general
4. Yes. None
5. Yes. War bonds

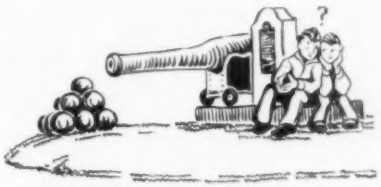
South Orange, N. J.
Spencer Miller, Jr., Village President:
2. Flood control; street improvements; drainage; sewerage
3. Engineering Department
4. Yes. Advisory only
5. Yes, in capital improvement fund

South Pasadena, Calif.
Frank H. Clough, City Manager:
2. Public buildings; storm drains; street improvements; street openings
3. Engineering Department
4. Yes. Reviews and recommends
5. Yes, capital outlay bonds

Streator, Ill.
Paul E. Uebler, City Clerk:
2. Sewerage disposal plant; sewers; pavements
3. Departments of Streets and Public Improvements
4. Yes
5. No

Suffolk, Va.
J. C. Causey, Jr., City Manager:
2. Street improvements; sewerage disposal; municipal building
3. City Manager and City Engineer
4. No planning commission
5. None to date. Matter is being considered by City Council

Texarkana, Ark.
S. H. Atkinson, Mayor:
2. Street paving; sewer project; playground; fire station
3. Engineering Department
4. No planning commission
5. Yes



CARTOON BY MARJORIE SEWELL, LANDSCAPE ARCHITECT
When the boys come home, let's have something better than this planned for them.

Thomasville, N. C.
R. M. Cooksey, City Manager:
2. Expansion of water plant and system, sewage disposal plant, etc.; street paving; parks and recreation program
3. City Manager's Office
4. No planning commission
5. Building small surplus

Traverse City, Mich.
C. A. Miller, City Manager:
2. Sewer; water mains
3. Engineering Department
4. Yes. Not definitely determined yet
5. Yes

Two Rivers, Wis.
John P. Hoffman, City Manager:
2. City hall; additions to library, hospital, vocational school, garbage incinerator and equipment building; street improvements; water extensions; storm water and sanitary sewers; sidewalks, curbs, and gutters
3. City Engineer
4. Yes. Advisory
5. No. We are attempting to wipe out our deficit

Urbana, Ill.
George F. Hurd, Mayor:
2. Street lighting system for business district; street improvements
3. Commissioner of Public Works
4. No planning commission. Committee appointed from City Council to plan for post-war work
5. No. City's share of motor fuel tax allotment is being left to accumulate for street improvements

Wenatchee, Wash.
J. V. Rogers, Mayor:
2. Street improvements; sewer installation; park improvements
3. Street and Water Departments
4. No planning commission
5. None as yet

Winchester, Va.
S. L. Grant, City Manager:
2. New disposal plant; additions to sewer system and water distribution system; new reservoir
3. Council and City Manager
4. Planning Commission is obsolete—does not function
5. No

Winnetka, Ill.
H. L. Woolhiser, City Manager:
2. Flood control; street extensions and widening in business district
3. Public Works Department (Engineer's office)
4. Yes. Advisory
5. Yes

Wooster, Ohio
Fred S. Howard, Service Director:
2. Enlargement of water works plant; extension of water mains; storm sewer; sidewalks; municipal garbage plant; improvements to sewage disposal plant
3. Service Department
4. No planning commission
5. Yes

Ypsilanti, Mich.
Ross K. Bower, Mayor:
2. Sanitary and storm sewer construction; extension of water and gas mains; enlarging of water pumping and treatment plant, and sewage disposal plant; construction of city storehouse and garage
3. Engineering Department and Board of Public Works
4. Yes. Advisory
5. No. Emergencies brought on by Willow Run bomber plant require such an amount of funds that it is impossible to tax to accumulate additional surplus

More Cities Get Power to Build Cash Reserves

Up to last month the American Municipal Association reports that the Legislatures of 10 states have given local governments legal authority to lay aside money for post-war public works. These states are: Arizona, California, Connecticut, Florida, Kentucky, Maine, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Oregon, Pennsylvania, Rhode Island, and Washington.

Municipalities Setting Up Post-War Reserves

In the nine-part symposium on Post-War Planning for Municipal Improvements which has been reported in The American City from November 1942 to September 1943, 249 municipalities in all parts of the United States have reported that they have begun to plan for post-war public works or other municipal improvements to be undertaken when materials and manpower are available. Of these 249 municipalities, 140 state that they are setting up reserves, in war bonds or otherwise, for post-war public works.

A tabulation of these reports by population groups follows:

Population	Cities Whose Replies Were Published	Cities Setting Up Post-War Reserves
50,000 and over	98	9
25,000 - 50,000	77	33
15,000 - 25,000	64	27
10,000 - 15,000	130	71
Totals	249	140

600 LB. NOZZLE PRESSURE EXTINGUISHES FIRES FAST!

FIRE KNOCKED DOWN *in 30 seconds and completely out with less than 500 gallons of water, after low pressure had failed. Write for complete details of this and similar case histories.*

★ ★ ★

BEAN FIRE FIGHTER GUN . . . *shows trigger-lock gun releasing close-up fog for closed areas. The pump makes the pressure; the gun controls it. One man can fight fire with this gun, and can handle one ¾-inch hose easily.*

THE BEAN-FMC *Fog Fire Fighter Truck . . . Equipment includes 300-gallon water tank, two lengths of hose and two Fog Fire Fighter Guns of 30-gallons per minute capacity giving 60 G.P.M. at 600 lbs. nozzle pressure.*

7 BIG ADVANTAGES!

1. 10 to 35 times more effective and faster than low-pressure.
2. Puts out fires with 90% less water.
3. 95% to 98% of all fires can be put out with little or no water damage.
4. Carries own water supply—up to 400 gallons, as well as attachments for taking water from any available source.
5. Compact . . . complete self-contained fire-fighting equipment.
6. Light weight.
7. Low cost for all-around fire protection.

10 to 35 Times More Effective Than Low Pressure...Extinguishes 95% to 98% of Fires with Little or No Water Damage

High pressure atomization (600 pounds at the nozzle, 750 to 800 pounds at the pump) is the most modern and effective technique ever used in fire fighting. It is 10 to 35 times more efficient than low pressure — and as much faster. Will put fires out with little or no water damage. The BEAN-FMC Fog Fire Fighter is effective on all types of fires.

High pressure "fog" from one gallon of water absorbs 10 to 35 times as much heat as same amount of low pressure water. Has extraordinary cooling and smothering effect with tendency to blow the fire out.

Reduce Fire Losses . . . Equip with this Modern Protection! BEAN-FMC Fog Fire Fighters are built in several models—light, compact, low cost — with power take-off units assuring ample power for operating the pump. Carries own water supply and complete equipment. Plan to modernize your equipment as soon as the war is over. Write John Bean Mfg. Co., 702 Hazel St., Lansing, Michigan or Bean-Cutler Division of Food Machinery Corporation, 402 Julian St., San Jose, Calif.

Manufacturers of high pressure crash trucks for gasoline fires and decontaminators for war use.

BEAN-FMC *Original* FOG FIRE FIGHTER

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO. DIVISION, 702 HAZEL ST., LANSING, MICH. • BEAN-CUTLER DIVISION, 402 JULIAN ST., SAN JOSE, CALIF.

Rochester's City-County Fire System

By Harold S. Rand
Bureau of Municipal Research
Rochester, N. Y.

THE Rochester Fire Training School was organized for emergency war defense, but the efficient county-wide system of fire protection which it has established should be retained as a permanent program for city and county.

Late in 1940 civilian defense officials became concerned with problems which possible air raids would create in the coastal cities. Rochester, as one of the probable victims, began to study the various phases of civilian protection. Commissioner of Public Safety Thomas C. Woods asked for a complete investigation and report.

As a result, a fire training school was created with Battalion Chief Thomas H. Coates, director, on April 14, 1941. A week later, a manual training course was opened at the drill tower, where 125 city firemen were taught eight hours a day for two or more weeks. This instruction was followed by company sessions in all fire companies, and by tests in drawing water with the water tower at the Genesee River. During the winter, indoor sessions were held at Edgerton Park where the building space permitted the use of pumpers, trucks, and all training evolutions.

In addition to the city firemen, 224 members of town fire companies were trained in an evening course running one night a week for five months.

The incendiary explosives and war gas control classes opened on May 21, 1941, under direction of instructor Lawrence E. Reilly. Before the end of the year training had been given to 520 Rochester city firemen; 1,787 volunteer firemen from Monroe and adjacent counties; and 558 auxiliary firemen from the police force, from institutions and plants, and from civilian defense groups such as air raid wardens, Red Cross, and medical services.

In July 1941, an advanced course was started for regular, volunteer industrial, and institutional firemen. After twelve weekly lessons examinations were held, and 458 firemen were awarded Regents' certificates by authority of the New York State Board of Regents.

The training program for auxiliary firemen started also in July, under the direction of Battalion Chief James G. Murray. A twelve-lesson course was given in fire-fighting methods and in incendiary explosives and war gas control, at the city fire houses. To date 1,600 civilian firemen have completed the training.

Rochester now has 99 auxiliary fire groups, consisting of 69 auxiliary pumping companies and 30 rescue squads. All the firemen have completed the training course, and the men in the rescue squads have been selected for their mechanical ability. They will be equipped with heavy tools for rescue work.

To date the auxiliaries have hats, armbands, and overalls. They have received 43 skid pumps, 7 front-end pumps, ladders, and 43,000 feet of 2½-inch hose. These companies are awaiting the arrival of 46 portable pumping units. Nine of the city's 2,500-gallon street flusher trucks have been equipped as emergency pumpers.

Mutual Aid Plan

The mutual-aid plan calls for the coordination of all fire-fighting personnel and equipment in Monroe County under one command during period of emergency. The Rochester War Council, the Monroe County War Council, the fire commissioners of the towns of Monroe County, the Monroe County Volunteer Firemen's Association and the Rochester Department of Public Safety deserve much credit for instituting the mutual-aid plan. Under the new plan the 54 volunteer fire companies of the towns as well as the city companies have been trained. Equipment has been standardized or converted so that each piece of apparatus can be used anywhere in the county.

The post-war results of the mutual-aid plan should not be ignored. It is doubtful if a system which gives this county an immeasurably greater degree of emergency protection at no perceptable increase in expense will be discarded at the end of the war.

Plant Protection

Another field of service in which the Rochester school leads the state, if not the nation, is plant protection. To date the school has trained 2,311 plant employees and has seen to the establishment of plant protection services in 244 local factories, department stores, and office buildings. Forms and procedures evolved locally have been approved by the state, and many other communities have used these in setting up plant protection services.

Plant protection is a war function, required by the State Office of Civilian Defense. Fire Chief John A. Slattery, with Deputy Chief Thomas H. Coates, director of the training school as his executive assistant, is in charge of the program started in April 1942. The major industrial plants, department stores, office buildings, and hotels have been encouraged to set up their own protection service under the direction of the fire college.

The plant protection procedure establishes four specific services: maintenance service, police protection, fire protection, and health service. The industries select their own chiefs for each branch of these services and man them with their own personnel. *All protection service crews are trained at the fire school with the chiefs getting extra instruction in the advanced courses.*

The present plant protection service, if continued in the post-war period, will provide Rochester with trained personnel at the main points of possible conflagrations.

New Sources of Municipal Revenues

COLUMBUS, O., has adopted a revenue raising plan which since May has netted approximately $30,000. Providing for licensing and regulation of minor street privileges, the ordinance levies annual fees for vaults, tunnels, grilled openings for coal chutes, elevators, overhead bridges, marquees, loading platforms, underground pipes, railroad switches, street scales, poles, and hoists.

These fees are in addition to inspection, construction, and other permit fees, but do not apply to privileges existing in connection with dwellings, hospitals, and religious institutions. All license fees are payable in advance, according to the International City Managers Association.*

Failure pay subjects the permitee to a 5 per cent penalty charge, and if not paid within 30 days after due a 10 per cent penalty is added. After 60 days the Director of Public Service notifies the permitee of termination of privileges.

* For a comprehensive discussion of New Local Sources of Municipal Revenue, see The American City for July 1943, pages 47-49.

Mr. Water Commissioner . . . . Hear! - - Hear!

Strangers within the gates of your city are greatly impressed by your roads and other public facilities, but it is your water supply that affects them most.

One of the things that gives a lasting impression of a city is the palatability of its water supply.

But more important than transients, are your regular taxpayers who drink or otherwise use your water throughout the various seasons of the year. They depend on you to see that they receive palatable drinking water spring, summer and winter regardless of drought or flood.

A survey of 842 American cities using Activated Carbon in their water plants shows an annual cost of but 2c per person—investigate the possibilities of using Aqua Nuchar in your city—its use results in clear, palatable drinking water.

NUCHAR AQUA

INDUSTRIAL CHEMICAL SALES

DIVISION WEST VIRGINIA PULP & PAPER COMPANY

230 PARK AVENUE, NEW YORK 17, N.Y.
35 E. WACKER DRIVE, CHICAGO 1, ILLINOIS
748 PUBLIC LEDGER BLDG., PHILADELPHIA 6, PA.
844 LEADER BLDG., CLEVELAND 14, OHIO

How WMC Classifies Cities

Labor Stringency Determines Their Rank

EVERY city in the country with a population of 25,000 or more is now classified by the War Manpower Commission in terms of its manpower supply. These classifications are reviewed each month, and at monthly intervals, WMC changes classifications in cases where it is evident that the labor market situation has altered. Thus, for example, in the August listing, the Dayton-Springfield (Ohio) area, which had been classified in Group I, is shifted to Group II. Over the last few months manpower in that community has become less tight, and a program for labor sharing and labor stabilization, worked out jointly by industries and unions there, has been accepted by WMC as a guarantee that Dayton-Springfield can keep its head above water.

How a city is classified by WMC has become increasingly important to its business men. Procurement agencies are giving more and more weight to manpower considerations in letting and canceling contracts. Other things being reasonably equal, a plant located in a Group I city will be much less likely to get a new contract than a city listed in another group; and as between two firms in different towns holding contracts that the Government wants to scale down, the company in the tighter manpower area can expect to suffer first.

WMC now has 55 communities in Group I, defined as "areas of acute labor shortage"; 111 in Group II—"areas of labor stringency in which a labor shortage may be anticipated within six months"; 81 in Group III—"areas in which a general labor shortage may be anticipated after six months"; 88 in Group IV—"areas in which labor supply is, and will continue to be, adequate to meet all known labor requirements."

The classification of the areas, as published in *Business Week* for August 7, is as follows:

Alabama
I Anniston, Gadsden, Mobile
II Florence, Huntsville, Talladega
III Birmingham
IV Montgomery, Tuscaloosa

Arizona
II Phoenix, Tucson

Arkansas
I Pine Bluff
IV Fort Smith, Little Rock

California
I Eureka, Los Angeles, San Diego, San Francisco Bay, Stockton
II Bakersfield, Brawley-El Centro, Fresno, Modesto, Sacramento, San Bernardino - Riverside, San Jose, Santa Ana, Santa Barbara, Ventura-Oxnard
All other areas in Group III

Colorado
III Colorado Springs, Denver, Pueblo

Connecticut
I Bridgeport, Hartford, New Britain-Bristol, Waterbury
II Meriden, Middletown, New Haven, New London-Groton, Stamford
III Norwalk, Norwich
IV Danbury, Torrington

Delaware
I Wilmington

District of Columbia
I Washington

Florida
I Jacksonville, Panama City, Pensacola, Tampa
IV Miami, Orlando, West Palm Beach

Georgia
I Brunswick, Macon, Savannah
II Atlanta, Augusta, Columbus
III Rome

Idaho
II Boise, Pocatello

Illinois
I South Chicago, Sterling
II Aurora-Elgin, Chicago, DeKalb, Rockford, Springfield-Decatur
III Joliet, Moline, Waukegan
IV Bloomington, Champaign, Danville, Galesburg, Herrin, Peoria, Quincy

Indiana
I Anderson, Evansville, Gary-Hammond
II Connersville, Fort Wayne, Indianapolis, Michigan City-La Porte, Muncie, Newcastle, Richmond, South Bend
III Bloomington-Burns City, Kokomo, Lafayette, Logansport, Marion
IV Terre Haute

Iowa
II Clinton, Des Moines
III Burlington, Cedar Rapids, Council Bluffs, Waterloo
IV Dubuque, Mason City, Ottumwa, Sioux City

Kansas
I Wichita
II Parsons
III Topeka
IV Hutchinson

Kentucky
II Louisville
IV Lexington, Owensboro, Paducah

Louisiana
II Lake Charles
III New Orleans
IV Alexandria, Baton Rouge, Monroe-Sterlington, Shreveport-Minden

Maine
I Portland
II Bath
III Lewiston
IV Bangor

Maryland
I Baltimore, Elkton
III Cumberland, Hagerstown

Massachusetts
I New Bedford
II Springfield-Holyoke-Northampton
III Boston-Quincy-Hingham, Brockton, Fall River, Fitchburg, Greenfield, Lynn-Salem, North Adams, Taunton, Worcester
IV Haverhill, Lawrence, Lowell, Pittsfield

Michigan
I Detroit, Muskegon
II Adrian, Battle Creek, Benton Harbor, Flint, Monroe, Pontiac, Port Huron, Saginaw-Bay City
III Grand Rapids, Jackson, Kalamazoo, Lansing

Minnesota
III Duluth
IV Minneapolis-St. Paul, Rochester

Mississippi
I Pascagoula
III Aberdeen, Meridian
IV Jackson, Vicksburg

Missouri
III Kansas City, St. Louis
IV Joplin, Springfield, St. Joseph

Montana
I Butte
II Billings
III Great Falls

Nebraska
II Grand Island-Hastings
III Lincoln, Omaha

Nevada
I Las Vegas
II Reno

New Hampshire
II Claremont, Portsmouth
III Nashua
IV Concord, Manchester

New Jersey
I Somerville, Trenton
II Newark, Paterson, Perth Amboy
III Long Branch, Morristown
IV Atlantic City

New Mexico
IV Albuquerque

New York
I Buffalo-Niagara Falls
II Albany-Schenectady-Troy, Amsterdam-Gloversville, Geneva, Massena, Rochester, Syracuse, Utica-Rome
III Auburn, Batavia, Binghamton, Dunkirk, Elmira, Ithaca, Jamestown, Newburgh, Sidney, Watertown
IV Kingston, New York, Poughkeepsie

North Carolina
II Burlington, Charlotte, Wilmington
IV Asheville, Durham-Raleigh, Greensboro-Winston-Salem, Rocky Mount-Wilson

North Dakota
IV Fargo

Ohio
I Akron
II Canton-Massillon-Alliance, Cleveland, Columbus, Dayton-Springfield, Lima, Lorain-Elyria, Mansfield, Newark, Piqua-Sidney-Troy, Sandusky-Fremont-Port Clinton, Youngstown-Warren-Sharon
III Cincinnati, Fostoria-Finlay-Tiffin, Hamilton-Middletown, Marion, Toledo
IV Portsmouth, Steubenville, Zanesville

Oklahoma
I Oklahoma City
II Chateau, McAlester, Tulsa
IV Enid, Muskogee

Oregon
I Portland
III Corvallis, Eugene

Pennsylvania
I Chambersburg
II Aliquippa, Allentown, Erie, Harrisburg, Johnstown, Lancaster, Lebanon, New Castle, Philadelphia, Pittsburgh, Reading - Pottstown, Washington
III Berwick, Scranton, Williamsport, York
IV Altoona

Rhode Island
II Newport, Providence-Pawtucket - Woonsocket

South Carolina
I Charleston
II Spartanburg
IV Columbia, Greenville

South Dakota
III Sioux Falls

Tennessee
III Knoxville
IV Chattanooga, Kingsport-Bristol, Memphis, Nashville

Texas
I Beaumont
II Dallas, Fort Worth, Galveston, Houston, Texarkana
III Amarillo, Brownsville, Corpus Christi, San Antonio
IV Abilene, Austin, El Paso, Laredo, Lubbock, San Angelo, Tyler, Waco, Wichita Falls

Utah
I Ogden, Salt Lake City
II Provo

Vermont
II Springfield
IV Burlington

Virginia
I Hampton Roads
II Richmond-Petersburg
IV Danville, Lynchburg, Roanoke

Washington
I Everett, Seattle-Tacoma - Bremerton, Spokane, Vancouver
II Longview-Kelso
III Aberdeen-Hoquiam, Olympia, Yakima

West Virginia
IV Charleston, Clarksburg-Fairmont-Morgantown, Huntington, Parkersburg, Point Pleasant, Wheeling

Wisconsin
I Racine, Sturgeon Bay
II Kenosha, Manitowoc, Milwaukee, Beloit
III Eau Claire, LaCrosse, Madison-Merriman, Sheboygan, Superior
IV Appleton, Fond du Lac, Oshkosh, Wausau

Wyoming
I Cheyenne

Territory
I Hawaii

► NEVER AGAIN will the wartime user of construction equipment, who has had firsthand contact with the varied services rendered by the Equipment Distributor in these days of priorities and shortages of machines and parts, take for granted the importance and value of those services.

Because he was properly geared-up in times of peace, the distributor and the members of his shop and field forces have been able to make a major contribution to the success of a program of construction for war such as no country has ever undertaken.

It has been said that America has solved the problem of low-cost production of machines and goods, but that the problem of efficient, economical distribution remains. We sincerely believe that this is not true of the construction equipment industry, where the Distributor has enjoyed the confidence of his customers in times of peace; has more than justified that confidence during these troubled and uncertain times, and will continue to justify it after the Peace is won, and he can again become a Sales as well as a Service Engineer . . . and resume his complete function as the vital link between manufacturer and user. THE AUSTIN-WESTERN ROAD MACHINERY CO., Aurora, Illinois, U. S. A.

ARMY NAVY
BUILDERS OF ROAD MACHINERY
Austin Western
SINCE 1859
BUY MORE WAR BONDS

Wartime Water Rates

The first installment of THE AMERICAN CITY'S *latest study on water rates. Briefly summarized for each city, will be the type of plant and distribution system that the rates support, the kind of water they purchase, and an indication of the way these rates are being maintained.*

Lewiston, Maine

Rates:

(Lewiston has both flat and metered rates. All are billed quarterly.)

FLAT RATE

	Yearly Rate
Private dwelling, one family, one year	$5.00
Each additional family	4.00
Water closet	1.50
Water closet—store or office	3.00
Water closet—two or more families, same house, each	1.50
Sink or lavatory in store or office, each	5.00
Bath tub	2.00
Hand hose	2.00
Boiler	1.00
Wash tubs	1.00

METERED RATE

First 2,500 cu. ft.	$3.75 (minimum)
Next 3,500 " "	15c per 100 cu. ft.
" 9,000 " "	12c " " " "
" 10,000 " "	10c " " " "
" 25,000 " "	8c " " " "
" 25,000 " "	6c " " " "
" 75,000 " "	4½c " " " "
All over	3½c " " " "

Minimum rate $15 per annum

General Data:

Population served, 36,000
Flat rate connections, 4,443
Meters, 412
Supply, Lake Auburn
Treatment, chlorination only
Water, 18-24 ppm $CaCO_3$, pH 6.7
Average consumption, 5¾ mgd
Plant capacity, 21 mgd pumping, 9 mgd pipe line
No. of hydrants, 400
Hydrant rate, $25 per annum
Miles of main, 82

Consumer Cost:

(Based on meters only and prorated per month.)

3,000 gal. (400 cu. ft.) per month cost $1.25
5,000 gal. (667 cu. ft.) per month cost $1.25
10,000 gal. (1,333 cu. ft.) per month cost $2.00

Metered rates appeared in the Dec. 1935 THE AMERICAN CITY and have been unchanged since then.

GEORGE J. MAHER,
Chief Clerk, Lewiston Public Works Dept.

Topeka, Kansas

Rates:

First 100 cu. ft.	25c (Minimum)
Next 900 cu. ft.	23c per 100 cu. ft.
Next 1,900 cu. ft.	13c " " " "
All over	9c " " " "

General Data:

Population served, 70,000 plus military bases varying in size
Meters, 21,054
Supply, Kansas River
Treatment, lime-soda ash with rapid sand filters
Raw water, 290 ppm $CaCO_3$ (average)
Tap water, 107 ppm $CaCO_3$, (average) pH 9.6.
Average consumption, 5 mgd
Plant capacity, 10 mgd
Miles of mains, 315

Consumer Cost:

3,000 gal. (400 cu. ft.) per month costs $0.94
5,000 gal. (667 cu. ft.) per month costs $1.55
10,000 gal. (1,333 cu. ft.) per month costs $2.75

Present rates represent a 30-37 per cent reduction over those published in 1935 (see Oct. '35 AM. CITY). All capital investments paid from water revenue.

LLOYD B. SMITH,
City Commissioner of Water.

Winchester, Massachusetts

Rates:

15c per 100 cu. ft.
Minimum charge $6.00 per year for 4,000 cu. ft.
No hydrant rental

General Data:

Population served, 15,470
Meters, 3,560
Supply, impounding reservoir. Shallow wells used as auxiliary supply
Treatment—Reservoirs: chlorination (Merclor), Calgon (for red water), both treatments very successful.
Treatment—Wells: Zeolite softening and caustic soda
Plant capacity—Reservoirs, 1 mgd
" " Wells, 0.5 mgd
Average consumption, 1 mgd
No. of hydrants, 643
Miles of mains, 62

Consumer Cost:

3,000 gal. (400 cu. ft.) per month cost $0.60
5,000 gal. (667 cu. ft.) per month cost $1.00
10,000 gal. (1,333 cu. ft) per month cost $2.00

The system is free of debts and is earning a substantial income.

E. C. SANDERSON,
Chairman, Water and Sewer Board.

Elizabeth, New Jersey

Rates:

First 15,000 cu. ft.	$2.50 per 1,000 cu. ft.
Next 485,000 cu. ft.	1.80 " " " "
All over	1.60 " " " "

Fire service charges $0.0075 per inch-foot per year
Bills rendered quarterly. Minimum charges per quarter based on meter sizes as follows:

⅝" meter	$3.00
¾" "	6.00
1" "	10.00
1½" "	20.00
2" "	26.00
3" "	52.00
4" "	85.00
6" "	145.00
8" "	230.00
10" "	265.00

General Data:

Population served, 115,000
Meters, 17,030
Supply, 71% purchased from the city of Newark (surface)
Supply, 25% purchased from the Elizabethtown Water Co. (wells)
Supply, 3% purchased from the Plainfield Union Water Co. (wells)
Supply, 1% from Raritan-Millstone river plant of Elizabethtown Water Co.
Water, 28-56 ppm $CaCO_3$ from surface supply, pH 7.3-7.7
Water, 180-204 ppm $CaCO_3$ from well supply, pH 7.5
Average consumption, 9 mgd
No. of hydrants, 1,226
Miles of main, 171.6

Consumer Cost:

3,000 gal.	(400 cu. ft.)	cost $1.00
5,000 "	(667 " ")	" 1.67
10,000 "	(1,333 " ")	" 3.33

Present rates represent a 7½ per cent reduction over those appearing in June '35 THE AMERICAN CITY. Rates for fire service show a 25% drop. Annual discounts amounting to 10c per 1,000 cu. ft. per year, credited to the first bill submitted the following year have been given for the last 6 years—the amount depends on the plant earnings.

S. F. NEWKIRK, JR.,
Engineer and Superintendent, Board of Water Commissioners.

INDIAN

Clear Water **FIRE PUMPS**

are the most economical fire fighting apparatus for the municipality since they use only clear water and tests show they will handle 70% of all calls without laying hose. No chemicals needed. Photo shows regular firemen instructing volunteers in use of INDIAN FIRE PUMPS.

INDIAN

Clear Water **FIRE PUMPS**

carry slung on the back thus enabling operator to move about quickly without having to drag a heavy extinguisher around. 5 gal. rust proof tank is fillable at any water supply. Easy pumping throws powerful 30 to 50 ft. pressure stream. Note how fireman has complete freedom of arms.

INDIAN

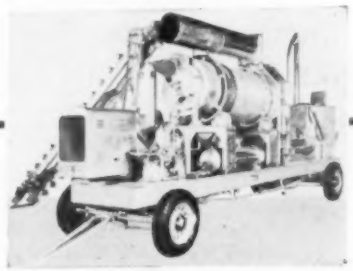
Clear Water **FIRE PUMPS**

are recommended by hundreds of fire chiefs who have written letters telling how valuable they are. They are the solution to the manpower shortage. Above picture shows the director of Cleveland Museum of Art trying on a pump. Note the many Indian Fire Pumps on floor ready for use.

D. B. SMITH & CO.

421 MAIN ST. UTICA, N. Y. *Send for complete catalog.*

Pacific Coast Branch: Hercules Equipt. & Rubber Co., 435 Brannan St., San Francisco, Cal.



PORTABLE ASPHALT PLANTS

Write for Catalog

Elkhart White Mfg. Co. Indiana

ANTHRAFILT

A Filter Medium For All Purposes

ANTHRACITE EQUIPMENT CORP.

101 Park Ave. New York

H. G. Turner Research Engineer

STATE COLLEGE, PA.

7 things you should do to keep prices down

If prices soar, this war will last longer, and we could all go broke when it's over. Uncle Sam is fighting hard to keep prices *down*. But he can't do it alone. It's up to you to battle against any and every rising price! To help win the war and keep it from being a hollow victory afterward—you must *keep prices down*. And here's how you can do it:

1. Buy only what you need
2. Pay no more than ceiling prices
3. Support higher taxes
4. Pay off old debts
5. Don't ask more money
6. Save for the future
7. Buy War Bonds

KEEP PRICES DOWN

Use it up . . . Wear it out . . .
Make it do . . . Or do without.

Contributed by this magazine in cooperation with the Magazine Publishers of America.

Janesville's Shrine of Honor

By PRESCOTT LUSTIG

IN response to public demand for recognition of men and women in the armed forces, the City Council of Janesville, Wis., early last fall ordered the construction of an honor roll for the public display of the names of those in the services. This demand had been made imperative in Janesville because of the loss of the local tank company at Bataan, many of them now being prisoners of the Japs.

It was felt that the ordinary signboard type of honor roll should not be used here, and City Engineer Joseph Lustig was faced with the problem of designing a structure which would not become an eyesore and which would also have a basic architectural form. There was, moreover, the problem of finding a suitable site.

In the search for a site in a centrally located park, it was found that a ten-sided, cast iron fountain on a small promontory offered a suggestion for a new type of structure. The fountain, 30 feet in diameter, was then obsolete and had a flower bed planted in it. This suggested the possibility of a ten-sided honor roll. The logical conclusion was that it should be covered with an ornamentally treated roof, which would add to its attractiveness and permit use of the interior.

Memorial Aspect

New possibilities and suggestions followed swiftly. Since the structure took on the appearance of a memorial, the name "Shrine of Honor" was forthcoming. The inside walls could be utilized for the display of names when the outside became filled, and eventually all the names on the outside could be transferred to plaques attached to the inside walls. The memorial aspect could be further fulfilled on the inside, where flat wall-cases could be used to exhibit war mementos and where plaques with the names of the veterans of past wars could be hung.

All of these ideas are being considered, and further developments to fulfill the shrine idea are being effected. The patriotic motif could be continued with the hanging of massed flags, and in the center of the room there could be the shrine proper with an ever-burning flame. A domed ceiling would add to the height and dignity of the room and the building as a whole has possibilities as a semi-permanent memorial pending the eventual construction of a permanent memorial made of stone.

The Janesville structure is substantial but not expensive. Its total cost so far has been only $2,200, as second-hand materials have been used as much as possible. A first request for priorities was turned down, but a second one was accepted after a full explanation of the morale-building value of the structure and the small amount of new construction materials needed.

Janesville's Shrine of Honor

Structural Details

In keeping with the Colonial effect, the structure has a hip roof with a cupola on top. The exterior walls consist of horizontal V joint siding as a base for the name panels. Each of the ten corners of the building is formed by a pillar. A flagpole is mounted on top of the cupola, and a flag will be kept flying day and night. The shrine is floodlighted from three sides at night, with a spotlight on the flag.

The outside panel walls measure 8 x 10 feet, with room for 308 names on each panel. This promises to prove satisfactory for a city of this size; to date, out of the total population of 23,000 there are 2,200 names on display. If it becomes necessary to utilize the interior walls also for name panels, a colonial type of entrance will be provided in the front, and a rear exit of the same design. This will provide a walk-through effect, since no doors are contemplated.

Moveable Plaques

The problem of listing the names on the shrine in alphabetical order has been solved by the use of moveable plaques, each bearing eleven names. Thus the names can be kept alphabetized, according to the first letter of the last name, and in most cases even to the second letter.

To avoid rearranging the name panels too often, the names of men subsequently leaving for the service will be posted temporarily in a glass-covered case, 44 by 34 inches in size, fastened to the last wall of the shrine containing the name panels. These lists of names will be posted as soon as received by the committee in charge of names.

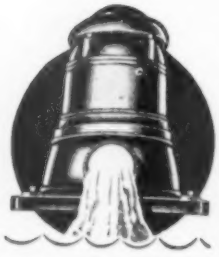
The name plaques are made of Masonite Pressed Wood and are 22 by 17 inches in size. The plaques are ducoed white, and the letters of the names are 1⅛ inches high, painted black with a grey shadow effect. Attached to walls with brass screws, they are fastened to the horizontal V jointed siding. There are seven plates to the row and four rows vertically.

Adaptability

As it can be seen, there are many possible variations which can be made around the basic form of this structure. Using this as a general idea, the shrine can be varied to meet the necessities of any community that wishes to undertake such a project. It is a flexible building plan, to which every city architect can add his personal ideas. Most of all it is a respectable tribute to those who are giving so much for their community and country, and focuses the public mind on the need for a more permanent type of memorial.

A project of this kind can be undertaken by a service club as its contribution to the war effort, or can be handled jointly with the city as is the case in Janesville. While the city erected the structure, the Lion's Club with the help of the American Legion has undertaken the task of obtaining and cataloging the names of the men and women which are to be posted.

BACK THE ATTACK ...WITH WAR BONDS



The Third War Loan must have your whole hearted support. Every surplus dollar should be invested in Bonds. The manufacture of Tanks, Planes, Ships, Guns, Bombs, Ammunition and Supplies must go on and on . . . and be increased. A shortage of this or that will mean the loss of more and more lives.

Bond purchasing is a sound business venture. The wealth of your Nation makes them safe. The freedom your dollars will help win will be beyond any dollar value that could be mentioned.

The Third War Loan is being enthusiastically backed by citizens from all walks of life. Industrialists welcome this safe source of investment for their unused capital and profits. We are all in this drive for victory—and we must win.

Our boys are giving their lives. They are enduring sweltering heat, muck, dust, rain and cold. They are not whimpering. They are expecting us to provide them with the implements of war. We must back their attack with our dollars and help them blast a path to Victory. Buy bonds today!

LAYNE & BOWLER, INC.
General Offices, Memphis 8, Tenn.

LAYNE AFFILIATED COMPANIES

Layne-Arkansas Co., Stuttgart, Ark. • Layne-Atlantic Co., Norfolk, Va., Savannah, Ga., Orlando, Fla. • Layne-Central Co., Memphis, Tenn. • Layne-Northern Co., Mishawaka, Ind. • Layne-Louisiana Co., Lake Charles, La. • Louisiana Well Co., Monroe, La. • Layne-New York Co., New York City and Pittsburgh, Pa. • Layne-Northwest Co., Milwaukee, Wis. • Layne-Ohio Co., Columbus, Ohio • Layne-Texas Co., Houston and Dallas, Texas • Layne-Western Co., Kansas City, Mo., Chicago, Ill., and Omaha, Neb. • Layne-Western Co., of Minnesota, Minneapolis, Minn. • International Water Supply, Ltd., London, Ontario, Canada.

LAYNE

WELL WATER SYSTEMS
DEEP WELL PUMPS

BUILDERS OF WELL WATER SYSTEMS FOR EVERY INDUSTRIAL AND MUNICIPAL NEED

More than 2,500 Negroes in Each of These Cities

THE rapidly growing need for better race relations in American cities gives special timeliness to this Census Bureau tabulation from the 1940 census, released last month, of urban places having more than 2,500 Negro inhabitants.

Forty per cent of the total Negro population of the United States reside—or did in 1940—in these 315 urban places. The proportions of Negroes to the total population of the individual cities ranged from 0.8 per cent to 72.2; three-quarters of these places had 10 per cent or more Negroes each.

In many cities the race relations problem has been greatly accentuated by the migration of Negroes for employment in war industries.

Improper Housing and Recreational Facilities

Here are significant excerpts from a letter written August 13, 1943, by Attorney General Francis Biddle to Lester B. Granger, Executive Secretary of the National Urban League:

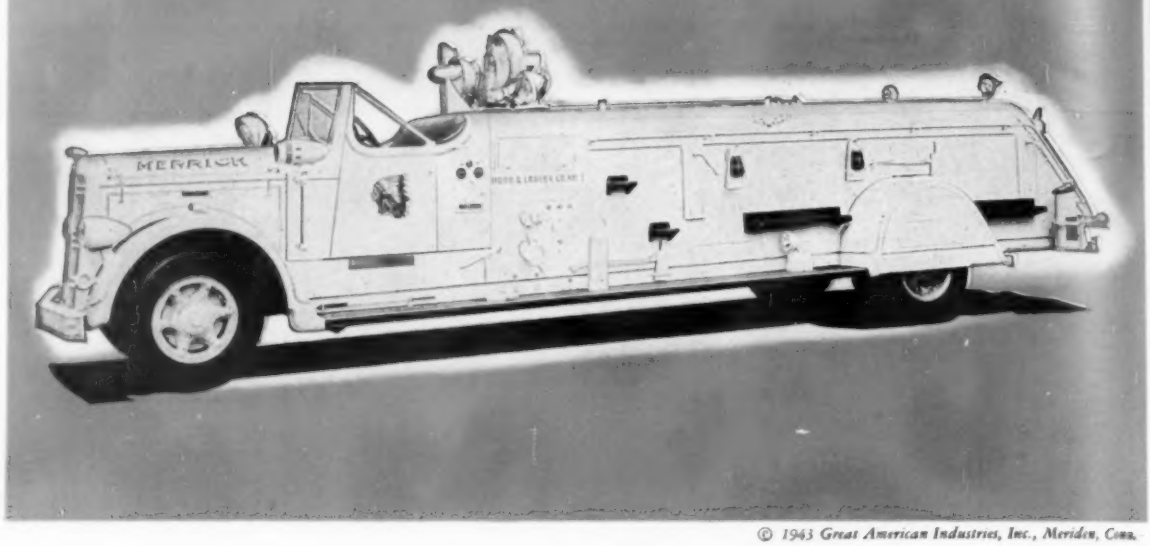
"Those who have made an objective study of the Detroit riots and of other racial or hoodlum clashes, are of the opinion that certainly one cause of the trouble springs from improper housing and recreational facilities for Negroes, as well as for whites, particularly in the over-congested production centers. They believe also that it is extremely difficult for cities to absorb large migrations of war workers, whether Negro or white, over a brief period; and that these migrations, therefore, necessarily contain the seeds of future dislocations. It seems to be advisable, therefore, that responsible officials should give careful consideration to the extent of required facilities before taking any steps to fill the particular manpower requirements."

Urban places	Negro population	Percent of total population
100,000 or more		
New York, N. Y.	458,444	6.1
Chicago, Ill.	277,731	8.2
Philadelphia, Pa.	250,860	13.0
Washington, D. C.	187,266	28.2
Baltimore, Md.	165,843	19.3
Detroit, Mich.	149,119	9.2
New Orleans, La.	149,034	30.1
Memphis, Tenn.	121,498	41.5
Birmingham, Ala.	108,938	40.7
St. Louis, Mo.	108,765	13.3
Atlanta, Ga.	104,533	34.6
50,000 to 100,000		
Houston, Tex.	86,302	22.4
Cleveland, Ohio	84,504	9.6
Los Angeles, Calif.	63,774	4.2
Pittsburgh, Pa.	62,216	9.3
Jacksonville, Fla.	61,782	35.7
Richmond, Va.	61,251	31.7
Cincinnati, Ohio	55,593	12.2
Indianapolis, Ind.	51,142	13.2
Dallas, Tex.	50,407	17.1
25,000 to 50,000		
Nashville, Tenn.	47,318	28.2
Louisville, Ky.	47,156	14.8
Norfolk, Va.	45,893	31.8
Newark, N. J.	45,760	10.6
Savannah, Ga.	43,237	45.0
Kansas City, Mo.	41,574	10.4
Miami, Fla.	36,857	21.4
Chattanooga, Tenn.	36,404	28.4
Winston-Salem, N. C.	36,018	45.1
Shreveport, La.	35,975	36.6
Columbus, Ohio	35,765	11.7
Montgomery, Ala.	34,535	44.2
Charleston, S. C.	31,765	44.6
Charlotte, N. C.	31,403	31.1
Mobile, Ala.	29,046	36.9
Augusta, Ga.	27,004	41.0
Macon, Ga.	25,604	44.2
Fort Worth, Tex.	25,254	14.2
10,000 to 25,000		
Jackson, Miss.	24,256	39.1
Boston, Mass.	23,679	3.1
Durham, N. C.	23,347	38.8
Tampa, Fla.	23,331	21.5
Columbia, S. C.	22,195	35.6
Little Rock, Ark.	22,103	25.1
Kansas City, Kans.	21,038	17.3
Gary, Ind.	20,394	18.3
Dayton, Ohio	20,273	9.6
Oklahoma City, Okla.	19,344	9.5
Portsmouth, Va.	19,338	38.1
San Antonio, Tex.	19,235	9.6
Beaumont, Tex.	18,921	32.0
Buffalo, N. Y.	17,694	3.1
Columbus, Ga.	17,458	32.8
East St. Louis, Ill.	16,798	22.2
Greensboro, N. C.	16,343	27.6
Knoxville, Tenn.	16,094	14.4
Raleigh, N. C.	15,818	33.7
Atlantic City, N. J.	15,658	24.4
Galveston, Tex.	15,432	25.4
Newport News, Va.	15,280	41.2
Tulsa, Okla.	15,151	10.7
Austin, Tex.	14,861	16.9
Youngstown, Ohio	14,615	8.7
Toledo, Ohio	14,597	5.2
Wilmington, Del.	14,256	12.7
Greenville, S. C.	13,982	40.3
Wilmington, N. C.	13,506	40.4
Petersburg, Va.	13,483	44.0
Asheville, N. C.	13,435	26.2
Jersey City, N. J.	13,416	4.5
Bessemer, Ala.	13,280	58.2
Lexington, Ky.	12,925	28.2
Meridian, Miss.	12,853	34.2
Roanoke, Va.	12,812	18.5
Vicksburg, Miss.	12,514	51.2
10,000 to 25,000—Con.		
Camden, N. J.	12,478	10.6
Greenville, Miss.	12,247	59.1
Pensacola, Fla.	12,238	32.9
Akron, Ohio	12,260	5.0
Omaha, Nebr.	12,015	5.4
St. Petersburg, Fla.	11,982	19.7
Monroe, La.	11,887	42.0
Baton Rouge, La.	11,624	33.5
Spartanburg, S. C.	11,400	35.4
Alexandria, La.	11,331	41.9
West Palm Beach, Fla.	11,219	28.6
Waco, Tex.	11,025	19.7
Selma, Ala.	10,956	55.2
Rocky Mount, N. C.	10,765	42.1
Orlando, Fla.	10,470	28.5
Lynchburg, Va.	10,236	23.0
Tuscaloosa, Ala.	10,178	37.0
Danville, Va.	10,168	31.0
Chester, Pa.	10,162	17.1
5,000 to 10,000		
Albany, Ga.	9,719	51.0
Wilson, N. C.	9,317	48.4
Trenton, N. J.	9,308	7.5
Port Arthur, Tex.	9,060	19.6
Milwaukee, Wis.	8,821	1.5
Jackson, Tenn.	8,785	36.1
Oakland, Calif.	8,462	2.8
Lake Charles, La.	8,322	39.2
Springfield, Ohio	8,293	11.7
Laurel, Miss.	8,237	40.1
Marshall, Tex.	8,074	43.9
Natchez, Miss.	8,001	52.3
Anniston, Ala.	7,910	31.0
Goldsboro, N. C.	7,889	45.7
High Point, N. C.	7,872	30.4
Denver, Colo.	7,828	2.4
Hattiesburg, Miss.	7,767	36.9
Greenwood, Miss.	7,750	52.5
Camden, Ala.	7,559	30.4
Valdosta, Ga.	7,469	47.9
Dothan, Ala.	7,457	42.4
Tyler, Tex.	7,391	26.1
Athens, Ga.	7,284	35.8
Harrisburg, Pa.	7,263	8.7
Hartford, Conn.	7,090	4.2
Charleston, W. Va.	7,011	10.3
Pine Bluff, Ark.	7,002	32.9
Fayetteville, N. C.	6,947	29.9
Daytona Beach, Fla.	6,910	30.6
Fairfield, Ala.	6,866	58.7
Evansville, Ind.	6,842	7.1
Montclair, N. J.	6,777	17.0
Sumter, S. C.	6,756	42.6
Florence, S. C.	6,709	41.8
Kinston, N. C.	6,706	43.6
Clarksdale, Miss.	6,672	54.8
Columbus, Miss.	6,599	46.4
Flint, Mich.	6,595	4.4
Muskogee, Okla.	6,596	20.4
La Grange, Ga.	6,594	30.0
Tallahassee, Fla.	6,487	29.9
Providence, R. I.	6,388	2.5
Des Moines, Iowa	6,340	4.0
North Little Rock, Ark.	6,272	29.7
New Haven, Conn.	6,235	3.9
New Rochelle, N. Y.	6,228	10.7
Thomasville, Ga.	6,221	49.0
Greenville, N. C.	6,194	48.9
Paducah, Ky.	6,191	18.2
East Chicago, Ind.	6,101	11.8
Brunswick, Ga.	6,060	40.4
Evanston, Ill.	6,058	9.2
Anderson, S. C.	6,017	31.0
East Orange, N. J.	5,950	8.6
Waycross, Ga.	5,843	34.9
New Bern, N. C.	5,839	49.4
Wichita, Kans.	5,686	4.9
Topeka, Kans.	5,679	8.4
Lafayette, La.	5,636	29.3
Orange, N. J.	5,620	15.9
Cairo, Ill.	5,494	38.1
5,000 to 10,000—Con.		
Rome, Ga.	5,479	30.8
Alexandria, Va.	5,281	15.8
Fort Lauderdale, Fla.	5,178	28.8
Texarkana, Tex.	5,127	30.1
Gainesville, Fla.	5,121	37.2
Mount Vernon, N. Y.	5,103	7.6
Sanford, Fla.	5,098	49.9
Arlington County, Va.[1]	5,032	8.8
Phenix City, Ala.	5,011	32.6
2,500 to 5,000		
Elizabeth, N. J.	4,941	4.5
Lakeland, Fla.	4,886	22.1
Cambridge, Mass.	4,856	4.4
Americus, Ga.	4,855	52.3
San Francisco, Calif.	4,846	0.8
Orangeburg, S. C.	4,748	45.1
Salisbury, N. C.	4,712	24.8
Huntsville, Ala.	4,710	36.1
Helena, Ark.	4,648	54.4
Minneapolis, Minn.	4,646	0.9
Bogalusa, La.	4,610	31.6
Plainfield, N. J.	4,574	12.2
Corpus Christi, Tex.	4,545	7.9
Huntington, W. Va.	4,498	8.7
El Dorado, Ark.	4,474	28.2
Elizabeth City, N. C.	4,465	38.6
Griffin, Ga.	4,415	33.4
Gastonia, N. C.	4,374	20.5
New Bedford, Mass.	4,297	3.9
Paterson, N. J.	4,268	3.1
Phoenix, Ariz.	4,263	6.5
Decatur, Ala.	4,256	25.6
New Iberia, La.	4,247	30.9
Fort Smith, Ark.	4,201	11.3
Hot Springs, Ark.	4,182	19.6
Greenwood, S. C.	4,153	31.9
Charlottesville, Va.	4,152	21.4
Hopkinsville, Ky.	4,146	35.4
San Diego, Calif.	4,143	2.0
Longview, Tex.	4,141	30.1
St. Paul, Minn.	4,139	1.4
Yonkers, N. Y.	4,108	2.9
Clarksville, Tenn.	4,044	34.2
Canton, Ohio	4,041	3.7
Opelousas, La.	4,031	44.9
Wichita Falls, Tex.	4,028	8.9
Opelika, Ala.	3,940	46.4
Pasadena, Calif.	3,929	4.8
Paris, Tex.	3,924	21.0
Camden, Ark.	3,897	43.4
Cordele, Ga.	3,873	48.8
Yazoo City, Miss.	3,868	53.3
Henderson, N. C.	3,852	50.4
Suffolk, Va.	3,837	35.8
Annapolis, Md.	3,792	29.0
Seattle, Wash.	3,789	1.0
Bridgeport, Conn.	3,787	2.6
Bryan, Tex.	3,756	31.7
Tallulah, La.	3,744	45.5
Reidsville, N. C.	3,732	35.9
Moultrie, Ga.	3,702	36.5
Canton, Miss.	3,696	61.5
Texarkana, Ark.	3,678	31.1
Okmulgee, Okla.	3,659	22.8
Bluefield, W. Va.	3,598	17.4
Washington, N. C.	3,565	41.6
South Bend, Ind.	3,553	3.5
Corsicana, Tex.	3,535	23.2
Asbury Park, N. J.	3,513	14.0
Palestine, Tex.	3,500	28.8
Milledgeville, Ga.	3,493	51.5
Ocala, Fla.	3,483	38.0
Palatka, Fla.	3,472	48.4
Aiken, S. C.	3,436	55.7
Troy, Ala.	3,417	48.4
Terre Haute, Ind.	3,398	5.4
Berkeley, Calif.	3,395	4.0
Homestead, Pa.	3,385	17.8
Hamtramck, Mich.	3,363	6.7
Gulfport, Miss.	3,348	22.1
Springfield, Ill.	3,257	4.4
2,500 to 5,000—Con.		
Florence, Ala.	3,355	29.3
Saginaw, Mich.	3,315	4.0
Decatur, Ga.	3,306	30.0
Lower Merion, Pa.[1]	3,271	8.3
Rochester, N. Y.	3,262	1.0
St. Augustine, Fla.	3,219	36.6
Tupelo, Miss.	3,217	39.8
Dublin, Ga.	3,213	41.1
Rock Hill, S. C.	3,198	32.8
Natchitoches, La.	3,189	48.7
Covington, Ky.	3,154	5.1
Shelby, N. C.	3,150	28.4
Blytheville, Ark.	3,145	39.5
Springfield, Mass.	3,144	3.1
White Plains, N. Y.	3,141	7.8
Concord, N. C.	3,121	30.0
Hackensack, N. J.	3,098	11.8
Middletown, Ohio	3,055	9.8
Pompano, Fla.	3,039	48.6
St. Joseph, Mo.	3,029	4.0
Hope, Ark.	3,028	40.5
Marion, S. C.	3,007	52.3
Englewood, N. J.	2,999	15.8
Aliquippa, Pa.	2,994	11.1
Fort Myers, Fla.	2,989	38.2
Muncie, Ind.	2,985	6.0
Talladega, Ala.	2,961	31.8
Alton, Ill.	2,943	9.4
Columbia, Tenn.	2,937	27.8
Eufaula, Ala.	2,932	44.8
Albany, N. Y.	2,929	2.2
Terrell, Tex.	2,906	27.7
Ruston, La.	2,905	40.9
Cambridge, Md.	2,892	28.6
Darlington, S. C.	2,864	44.2
Bainbridge, Ga.	2,849	45.2
Fort Pierce, Fla.	2,845	35.6
Minden, La.	2,841	42.8
Owensboro, Ky.	2,840	9.5
Prichard, Ala.	2,848	46.8
Tuskegee, Ala.	2,844	72.2
Peoria, Ill.	2,826	2.7
Steubenville, Ohio	2,814	7.5
Dyersburg, Tenn.	2,810	28.0
Sarasota, Fla.	2,802	25.2
Pontiac, Mich.	2,794	4.2
Gretna, La.	2,793	25.7
Panama City, Fla.	2,790	34.0
Temple, Tex.	2,788	18.2
Amarillo, Tex.	2,761	5.3
Grenada, Miss.	2,757	47.2
Inkster, Mich.	2,723	30.7
Tarboro, N. C.	2,721	30.1
Newnan, Ga.	2,720	37.9
Denison, Tex.	2,702	17.3
Johnson City, Tenn.	2,703	10.7
Fort Valley, Ga.	2,665	53.8
Greenville, Tex.	2,653	19.0
Norristown, Pa.	2,661	7.0
Grand Rapids, Mich.	2,660	1.6
Brookhaven, Miss.	2,644	42.8
Henderson, Ky.	2,644	20.1
Danville, Ill.	2,636	7.1
Ardmore, Okla.	2,619	15.5
Bastrop, La.	2,609	39.4
Biloxi, Miss.	2,580	14.8
West Point, Miss.	2,572	45.9
Demopolis, Ala.	2,566	62.0
Marietta, Ga.	2,552	29.4
District 1511, Center Hill (Fulton Co., Ga.)[1]	2,547	21.0
Newberry, S. C.	2,537	38.8
River Rouge, Mich.	2,536	14.9
Clearwater, Fla.	2,533	25.0
Bowling Green, Ky.	2,532	17.4
Forrest City, Ark.	2,527	44.3
Warren, Ohio	2,526	5.9
Richmond, Ind.	2,523	7.2
Camden, S. C.	2,522	43.9
Fort Wayne, Ind.	2,519	2.1
Steelton, Pa.	2,514	19.2

[1] Classified as urban under special rule.

3-73987

1943 Model



© 1943 Great American Industries, Inc., Meriden, Conn.

● This Ward LaFrance Quadruple was recently delivered to the Merrick, Long Island Fire Department — engineered and built to meet the *exact* needs of the community it protects. *

Although Ward LaFrance is producing special motor trucks for our armed-forces in record numbers, it is recognized that fire-fighting equipment for municipalities plays an all-important part in the over-all war affort, too. The Ward LaFrance apparatus we are turning out this year is the finest yet.

Write us about your requirements. Our engineering department will gladly make detailed recommendations to fit your particular situation with maximum economy and efficiency.

* This Ward LaFrance 500 g.p.m. Quadruple fully-enclosed ladder truck has an over-all length of 375 in., and a 242 in. wheel base. It carries 240 ft. of assorted ladders. Lighting equipment includes two 250 watt flood lights, one 500 watt flood light, and three 100 watt flood lights. It also has a 200 gal. booster tank. The engine is rated at 150 h.p.

WARD LaFRANCE

DIVISION GAI GREAT AMERICAN INDUSTRIES **ELMIRA, N.Y.**

Metallizing a water tower in Hanover, Kansas

Water-Works Maintenance by Metallizing

A Few Facts on a War Maintenance Practice That Should Outlast the Duration

LOOKING at new maintenance methods that have been pushed into prominence by the war, one that appears to have the most promise of being more than a duration substitute is that of metallizing. This consists of coating any worn or corroded object with a molten metal spray of a type able to resist corrosive action or to renew the article. Although the process has been in use for many years, it is only recently that it has been developed successfully.

It finds greatest popularity as a method of maintaining and protecting water tanks, removing the need for repeated painting at three- or four-year intervals and eliminating excessive pitting and further corrosion.

Careful Work Required

The work, of course, must be performed carefully if it is to be successful. First, when any given surface is to be treated, it must be cleaned thoroughly. Sandblasting has proved highly effective. The sand should be sharp and hard, leaving the surface with tiny barbs or keys to facilitate the bonding. There must be no dirt of any kind on the surface.

Steel grit often is used in this sandblasting operation; however, operators in some areas have noted difficulty with it. The shot rusts quickly and small particles of the rust are transferred to the sprayed surface. The particles are so small that it is difficult to detect them and the metal will inevitably not adhere.

Choose Correct Metal

Next, a correct metal must be chosen. Zinc has proved popular because of its reasonable cost. Furthermore it is opaque and, when sprayed onto an iron or steel surface, will deflect the rays of the sun. It also has the important characteristic of being aniodic to iron, and any electro-chemical action between it and iron will be from the zinc to the iron. As zinc oxidizes, it forms carbonic salts. This coating is tough and stops the penetration of air and moisture, thereby preventing further corrosion.

Various types of guns using propane gas, oxygen, and compressed air have proved particularly useful in applying this coating. Through the rear of the gun, the zinc wire, $\frac{1}{8}$th inch in diameter, is inserted until the control gears grasp the wire firmly and feed it steadily through the nozzle. As the wire passes the tip of the nozzle, the flame melts it and the compressed air shoots it against the surface that is being treated, bonding it firmly to the roughened surface.

Spray Immediately

One important step is to be sure that the spraying of the metal should follow closely after the sandblasting. Under no condition should a cleaned section be allowed to remain unsprayed overnight.

The actual applications of the work, of course, give a guide to its use. Shelton, Nebr., has saved the replacing of the bottom of its overhead tower by metallizing. Hanover, Kans., also has rehabilitated a standpipe that was in poor condition. The work at these places was done by the Harry Rath Co., Lincoln, Nebr.

Many Applications

The process has far more applications than just that of maintaining overhead water tanks and standpipes. J. S. Stevens, Superintendent of Yards and Shops, East Bay Municipal Utility District, Oakland, Cal., points to its successful use on wash-water troughs, sluice gates, and exhaust manifolds. Pump impeller shafts, transmission shafts, and roller pins of trenching machines, and tractor and crane parts have all been built up to original dimensions with appropriate metals. He also indicates the possibility of its use on tank floats, gages, ladders, grizzlies and gates, water-wheel runners, fences, signs, and many other places. In a speech before the California section of the A.W.W.A., Mr. Stevens emphasized that those who have tried this method of maintenance will not return to their previous practices even after the war when parts become available again.

Costs

Regarding costs, it is safe to say that the metallizing of an overhead water tower is more expensive than painting. However, supporters of the process assert that a good job will last almost indefinitely, whereas the best of paint jobs must be renewed periodically to offer equivalent protection.

Supporters also state that the process eliminates the need for cathodic protection of water towers. However, one progressive midwestern water company has adopted the practice of metallizing its tanks above the waterline and using cathodic protection below.

No Gold Braid, *but* . . .

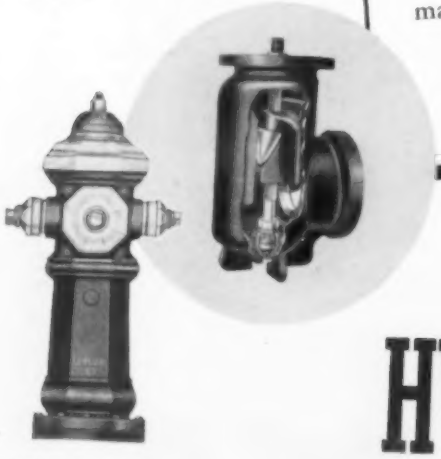
. . . the earnest men who direct and maintain vital municipal waterworks and sewerage systems have their strategical problems, too. They must conduct their campaigns against fire, flood and epidemics—all enemies of industry and public welfare which would interrupt or slow down manpower and production. They must marshall carefully such supplies as are available. They must shift equipment, make repairs and use to the utmost advantage whatever is obtainable under priority restrictions.

Ludlow, regardless of a sincere wish to be co-operative, is limited by rulings of the War Production Board. We will gladly send you such information as we have on WPB priorities and, when you have obtained a rating, we will make shipment with all possible promptness.

V-8

THE LUDLOW VALVE MFG. CO., INC.
TROY, NEW YORK

LUDLOW HYDRANT CONSTRUCTION: Self-releasing 30° angle wedges and free-floating gates, self-adjusting to seats, afford smooth, trouble-free performance, long service. Opening and closing of hydrant automatically opens and closes drain, located at lowest point. Clogging is prevented. Gate is wedge-locked when closed, to prevent flooding. All working parts may be lifted through top of hydrant for easy inspection. Top and bottom bodies bolted together at ground line.



LUDLOW
HYDRANTS AND VALVES

SINCE 1866

Quotable Thoughts for your Talks and Reports

Installment No. 8 of a Department of Ideas, Old and New, for Public Speakers and Report Writers.

To Dream Boldly and Build Bravely

We have, and we know we have, the abundant means to bring our boldest dreams to pass—to create for ourselves whatever world we have the courage to desire. We have the metal and the men to take this country down, if we please to take it down, and to build it again as we please to build it. We have the tools and the skill and the intelligence to take our cities apart and to put them together, to lead our roads and rivers where we please to lead them, to build our houses where we want our houses, to brighten the air, to clean the wind, to live as men in this Republic, free men, should be living. We have the power and the courage and the resources of good-will and decency and common understanding—a long experience of decency and common understanding—to enable us to live, not in this continent alone but in the world, as citizens in common of the world, with many others. . . .

But because we have the power we have also a responsibility to use the power. While there still is time.

ARCHIBALD MACLEISH
(In the June 1943 issue of *The Atlantic Monthy*)

" "

Minerva is said to have sprung full-armed from the brain of Zeus. But the trick has been lost through the ages. Legislative enactment does not and cannot magically produce effective organization.
—PAUL V. MCNUTT

" "

Educational and Civic Ideal—One and the Same Thing

A democracy is what its people make it, and therefore it depends on how it makes its citizens. It follows that its educational ideal must be the same as its civic ideal, aiming at a combination of freedom and self-discipline. Both rest on a twofold conception of duty—the duty of the State to the individual, and that of the individual to the State. The first can only be fulfilled if the best education that is available is put at the disposal of every child, so that he may grow up to enjoy the freedom of a developed mind; just as we are bent on providing him later in life with freedom from unemployment poverty, and a sordid environment.

—From *Britain Today*

" "

Regimentation and Reason

Among Bees and Ants are social systems found so complex and well-ordered as to invite offhand a pleasant fable enough: that once upon a time, or ever a man was born to rob their honeypots, bees were fully endowed with reason and only lost it by ordering so their life as to dispense with it.—ROBERT BRIDGES

Flexibility and Protection in Urban Growth

"Flexibility" in growth, and "protection" of growth, are fundamental issues in any manifestation that lives and grows. . . .

Generally speaking, the guidance of the principles of flexibility and protection, as applied to civic problems, means first, to plan any section of the city so as to make the city's normal growth possible without disturbing other sections; and second, to undertake such measures as could guarantee the protection of established values. In other words, this means: to safeguard continuous healthy growth by "flexible' planning; and to stabilize values by "protective" measures. . . .

The actual result of the process is that the unprotected compactness of the urban body evolves toward an open system of several protected community units. In other words, the actual result is: "decentralization."

ELIEL SAARINEN
(from his new book, "The City")

" "

The time of life is short;
To spend that shortness basely were too long.
—WILLIAM SHAKESPEARE

" "

Ostrich and Pedestrian

We laugh at the fable of the ostrich who buries his head in the sand to avoid being seen. But the ostrich doesn't hold a candle to the pedestrian who buries his head in an umbrella when crossing the street on a rainy day, the Portland Traffic Safety Commission reminds us. Getting wet is better than getting hit, the Commission suggests.

—*Portland City Club Bulletin*

" "

When bad men combine, the good must associate; else they will fall one by one, an unpitied sacrifice in a contemptible struggle.
—EDMUND BURKE

" "

The World Needs Both

The conservative temperament tends to dwell on what is indispensable, that this may be safeguarded. The radical temperament tends to dwell most on the higher ends of life, that these may be facilitated. The world needs both. But wisdom consists in the union of the two. The great advantage of the conception of Natural Law is that it leads us to consider every activity in its context in the whole economy of life, and so to grasp the vital importance of safeguarding what is indispensable while we fulfill the obligation of reaching out towards the higher ends, as yet imperfectly attained.

WILLIAM TEMPLE,
Archbishop of Canterbury.

Liberty and the General Welfare

We, the people of the United States want to promote the general welfare and to secure the blessings of liberty. Liberty we regard as an unalienable right; not certain enumerated aspects of freedom, that inevitably exclude or neglect other aspects, but Liberty, circumscribed only by the need to promote the general welfare.

—PRESTON S. MILLAR

" "

Recrimination and Hatred Lead Nowhere

While it may be difficult for us not to feel bitterness for the injuries we have suffered at the hands of the aggressors, let us remember that recrimination and hatred will lead us nowhere. We should use our energy to better purpose, so that every nation will be enabled to use its native genius and energy for the reconstruction of a permanently progressive world with all nations participating on an equitable and just basis.

—MADAME CHIANG KAI-SHEK

" "

You can't have peace without justice. You must be willing to work for justice or you can't get anywhere working for peace.
—MRS. FRANKLIN D. ROOSEVELT

" "

Forget at Your Peril

The effectiveness of public administration in a democracy is largely fixed by the practices and ideals which prevail in the wards and divisions of our centers of population. Only in autocracies are such determinations made at the top. The liberal dilettante may fume and fret, but forget the practical ward politician at your peril!—MORRIS LLEWELLYN COOKE

" "

Definitions Not in the Dictionary

Coordinator—A man who brings organized chaos out of regimented confusion.

Conference—A group of men who individually can do nothing, but as a group can meet and decide that nothing can be done.—*Planning and Civic Comment*

Expert—One who draws a straight and precise line from a false assumption to a foregone conclusion.

Optimist—One who proclaims that we live in the best of all possible worlds.

Pessimist—One who fears that is true.—JAMES BRANCH CABELL.

Crisis—In the vivid language of the Chinese, the word *crisis* is composed of two characters. One means danger. The other means *opportunity*. We need both words to describe the present struggle for world order, which involves so many vital spiritual values.—*World Alliance News Letter*

FITS YOUR NEEDS *for* RECORDS and DEEDS

A-PE-CO "Photo exact"
PHOTO-COPIER
$55.00

City and county officials find A-PE-CO a fast, accurate, low-cost legal means of copying official documents, records, and vital statistics . . . copies from books made without removing or harming pages. Engineers prefer A-PE-CO for copying blueprints.

Non-Fading Photo-Copies of letters • documents • records • blueprints • pictures • drawings

Same-size copies of anything up to 18"x22". Accepted as legal evidence. Eliminates steno-copying, tracing, proof-reading. Photo-copies direct from blueprints, graphs, tracings, telegrams, receipts, shop orders—anything written, printed, drawn, photographed. Endless uses for A-PE-CO. Needed by *all* departments. Big savings. Thousands in satisfactory use.

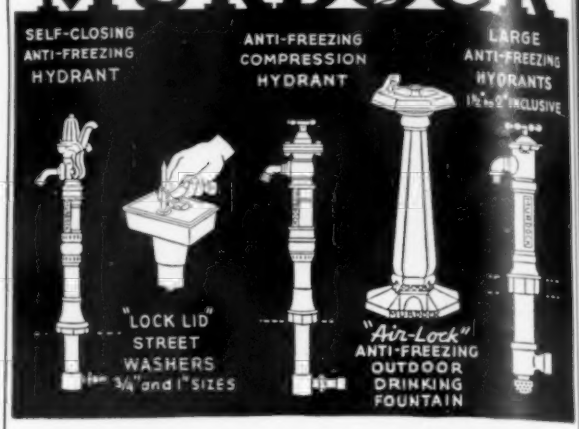
No Camera— No Darkroom — Low Cost

Simple, fast. No focusing. Conserves man-hours. Any office employee quickly becomes expert. Low cost per copy, lowest investment in equipment. Saves other equipment. Put A-PE-CO on any available desk or table. Immediate delivery. Representatives in principal cities and Canada. Write for A-PE-CO folder.

AMERICAN PHOTOCOPY EQUIPMENT CO.
2849 N. Clark St. Dept. EB-9 Chicago 14, Illinois

The Most Reliable Name on Water Service Devices

MURDOCK



TAKE A LOOK AT THE RECORDS

The finest contribution that MURDOCK can AND DOES MAKE to the war effort is found in the following:

Murdock Outdoor Water Service Devices show more hours continuous operation (low operating costs)—

Fewer repairs (occasional rewashering) and such repairs made without removing fixture (low upkeep)—

Releasing more men to defense industries without crippling water service departments or incurring heavy expenses.

Look at the records! Compare them! Match them! "It pays to specify and install MURDOCK."

THE MURDOCK MFG. & SUPPLY CO.
426 Plum St. : Cincinnati, Ohio

SAVE WITH HEIL M-1
street sanitation and garbage collection equipment

Let us help you plan now for bigger loads, faster operation, more efficient performance after the war. Write for complete details today.

Heil Conveyor Sanitation Unit — Heil Enclosed Garbage Dump Unit

THE HEIL CO.
GENERAL OFFICES • MILWAUKEE, WIS.

DEODOROMA CRYSTALS
for direct deodorizing

SPRINKLE in lavatory compartments, garbage pails — wherever there are foul odors. Choose the aroma you like best: rose, carnation, new mown hay, sandalwood, cedar. Deodoroma Refills for the Dolge Diffuseur also available in all five aromas. Deodoroma Urinal Blocks: sandalwood aroma.

Sorry—no Dolge Weed-Killer at this time. Your Dolge Service Man will keep you posted. Please see him when he calls.

The C. B. DOLGE Co., Westport, Conn.

SANITARY ENGINEERS
Send for Facts on Our "NON-CLOG"
SEWAGE SHREDDERS

Gruendler Shredders Selected by U. S. Navy

The Ideal Unit for Municipal Sewerage Plants

GRUENDLER CRUSHER & PULVERIZER CO.

For the disintegration of Rag, Stock, Garbage, Floatables, and Fibrous Materials *without Choke Downs* so as to pass Screen Bar—
Write for Facts

Weather, Climate, and City Planning

ADJUSTMENT to the forces of the atmosphere is the greatest unmet need in man's relation to his physical environment.

This was the theme of the 1943 Commencement Day address by A. E. Parr, director of the American Museum of Natural History, New York, before the Institute of Meteorology of the University of Chicago.

For many major construction projects, such as airports, dams, and the location of industrial plants, plans are drawn with deliberate consideration of prevailing wind directions and other aspects of climate. Such studies are seldom made in the general planning of cities, however,—"and the more complex relations to temperature, humidity, and precepitation," Dr. Parr points out in a letter to the editor of THE AMERICAN CITY, "seem even farther from the planners' minds."

Meteorology and the Post-War Renaissance

The title of the Commencement Day address was "Meteorology and the Post-War Renaissance." Excerpts follow:

"Weather and climate affect every activity undertaken by man, from his political thinking and social organization to his industries and recreations, and the forces of the atmosphere remain today as the only environmental factor of equal potency to which human society has scarcely even begun to make rational adjustments on a general scale. . . .

"We are still striving mainly to exclude the variables of the atmosphere by housing and clothing, which is exactly what our ancestors did when they put on a deer skin, moved into a cave, and rubbed two sticks together to start a fire. Although our results are more impressive to the eye, the fundamental principles of our methods are practically unchanged since cave-man days. Let us hope that a precise knowledge of meteorology and climatology will replace the generalizations of folklore, in planning for the home and cities of tomorrow.

"From the choice of the first cave even until this century, architectural style and construction has been dominated by the nature of the materials available. With modern means of transportation, architecture will cease to be chiefly a design in local materials, and it is up to the meteorologists to make certain that the new homes and the new cities must come to express the wisest responses to climate instead.

"A new profession has slowly begun to form during the last ten years or so. It is going to have tremendous influence after the war. It is the profession of city planners. Since it is new, it has not yet defined its contents or its boundaries, nor has it clearly formulated its prerequisites of knowledge. It is recruited from many fields. Public administrators, writers, sociologists, traffic experts, architects, and medical men make up the bulk of the membership. Meteorology has been little heard from as yet. . . .

"I should like to see a meteorologist offer a city plan which would create a city of calm in a windy location. While complete achievement is impossible, it is equally certain that tremendous improvement is perfectly feasible. I should like to see the meteorologists take a hand in determining the use of heat-generating or light-reflecting façades in city building. I should like to see the arbitrary rules about building forms and arrangements, designed to avoid shadow, give room for and intelligent and deliberate use of light and shadow by microclimatologists and architects working in conjunction, as the painters use their colors on the canvas. We know that the microclimate of cities is considerably different from the microclimate of surrounding nature. And by this very knowledge it is proven to us that a limited but quite considerable amount of outdoor air-conditioning, if you will, is perfectly feasible by intelligent application of meteorological principles to city planning."

Municipal Salaries Adjusted to Living Costs

By NORMAN N. GILL

Secretary, Technical Committee, City Hall
Milwaukee, Wis.

A TECHNICAL Committee, consisting of representatives of the five local governments in the Milwaukee area, submitted on July 16 a report recommending that public employees' wage and salary scales be adjusted to fluctuate according to the cost of living as determined by the U. S. Bureau of Labor Statistics indexes for the Milwaukee area.

The Committee recommended:

1. That the five units of government adopt a uniform plan for an automatic annual cost-of-living adjustment of the salaries of their employees, the initial adjustment to become effective as soon as possible and the subsequent adjustments to become effective once each year on January 1.

2. That each unit of government base its plan of adjustment on a monthly salary of $135 (an annual salary of $1,620), which this committee considers was the necessary family minimum during the base period of 1935-1939.

3. That the rate of adjustment each year be the difference between the cost-of-living index which the U. S. Department of Labor derives for the city of Milwaukee from the local indexes of cost of goods purchased by wage earners and lower-salaried workers by groups of items, as published in its quarterly report for June 15, and the base of 100 which is the average of indexes for the five-year period of 1935-1939.

4. That the base of $1,620 be multiplied by the annual rate of adjustment as determined in (3) above to secure a base for the actual cost-of-living adjustment for monthly, semi-monthly, per diem, hourly, and part-time employees, whose actual cost-of-living adjustments shall be determined as follows:

a. Employees paid monthly shall receive one-twelfth of the adjustment base for each month actually employed.

b. Employees paid on a semi-monthly basis shall receive one twenty-fourth of the adjustment base for each such pay period employed.

c. Per diem employees shall receive 1/250 of the adjustment base for each day employed.

d. Hourly employees shall receive 1/2000 of the adjustment base for each hour employed.

e. Part-time employees shall receive adjustments which are proportionate to the time that their actual period of employment bears to full time.

5. That the cost-of-living salary adjustment shall rise or fall as the cost-of-living index increases or decreases, but that no increase or decrease after the initial adjustment shall be greater than 10 index points in any one year, except that any excess above 10 index points shall be considered in the adjustment upward or downward, as the case may be, in the succeeding year.

6. That the annual cost-of-living salary adjustment shall be an addition to or a deduction from each employee's *base* pay and *in lieu* of previous cost-of-living adjustments, temporary increases, or bonuses that may be in force.

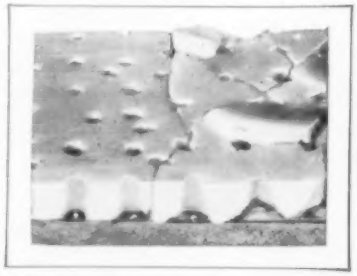
7. That the annual cost-of-living adjustment shall not apply to the wages or salaries of those employees whose compensation is adjusted from time to time in accordance with recognized prevailing rates set by union crafts and trade groups which have been accepted as standard for public employees.

The report was adopted *in toto* by a Policy Committee consisting of elected officials of the five units of local government in the Milwaukee area. The plan was then approved and adopted by the legislative bodies of the five local governments and went into effect August 1. A limited number of copies of the report are available on application to the undersigned.

MR. ENGINEER!

STOP WINTER SABOTAGE OF VITAL TRAFFIC!

When Storms Strike in your area . . . they must not be allowed to tie up vital trucking of war supplies and other essential traffic. And they needn't! For you have a sure ally against snow and ice in Sterling "Auger-Action" Rock Salt. Applied early in the storm, it prevents snow from packing and bonding to the pavement—makes complete removal easy. Keeping pavements *bare* this way is safest. Tests show that it takes 2½ to 7 times as long to stop a car on ice as on bare pavements!



But What Happens if ice has already formed? Sterling "Auger-Action" Rock Salt is still your best bet. As the model here shows, it digs in fast. And forms a brine with the melting snow and ice, loosening their bond with the pavement. Thus loosened and honeycombed, the snow and ice can easily be removed by scraper and plow. Further, when straight Rock Salt is used, it eliminates the cost of cleaning streets and catch basins which ordinarily become clogged with sand and cinders during thaws!

Sterling

"Auger-Action" ROCK SALT

FOR ICE PREVENTION

Highway Departments have shown savings of ⅓ to ½ by using Sterling Salt for ice prevention. Write today for bulletin containing all the facts on the most efficient and economical solution to your snow and ice removal problems. Free consultation with an International Field Engineer upon request. International Salt Company, Inc., Scranton, Pa.

BACK THE ATTACK

With War Bonds!

Money to finance the invasion phase of the war must come in large part from individuals on payrolls.

Your Bond-selling Responsibilities DOUBLE!

For this extra money must be raised *in addition* to keeping the already established Pay Roll Allotment Plan steadily climbing. At the same time, every individual on Pay Roll Allotment must be urged to dig deep into his pocket to buy *extra* bonds, in order to play his full part in the 3rd War Loan.

Your now *doubled duties* call for these two steps:—
1. If you are in charge of your Pay Roll Plan, check up on it at once—or see that whoever is in charge, does so. See that it is hitting on all cylinders—*and keep it climbing!* Sharply increased Pay Roll percentages are the best warranty of sufficient post war purchasing power to keep the nation's plants *(and yours)* busy.

2. In the 3rd War Loan, every individual on the Pay Roll Plan will be asked to put an *extra two weeks salary* into War Bonds—over and above his regular allotment. Appoint yourself as one of the salesmen—and see that this sales force has every opportunity to do a real selling job. The sale of these *extra* bonds cuts the inflationary gap and builds added post-war purchasing power.

Financing this war is a tremendous task—but 130,000,000 Americans are going to see it through 100%! This is their own best *individual* opportunity to share in winning the war. The more frequently and more intelligently this sales story is told, the better the average citizen can be made to understand the wisdom of turning every available loose dollar into the finest and safest investment in the world—United States War Bonds.

BACK THE ATTACK WITH WAR BONDS!

This space is a contribution to victory today and sound business tomorrow by THE AMERICAN CITY

Women Who Serve Cities

WHILE gathering and preparing the illustrations and items which appear on pages 64 and 65 of this issue, THE AMERICAN CITY received from the American Municipal Association an interesting outline of the increasing extent to which women are taking over transportation, police, and maintenance jobs in cities all over the country. This compilation follows:

Bus and Street Car Operators

Because of the manpower shortage, bus and street car lines are gradually being staffed by women. In San Francisco, Toledo, New Orleans, Charleston, Detroit, and Cleveland large numbers of women are now operating buses and street cars. A rule permitting women to operate buses and street cars was adopted by the St. Petersburg, Fla., Civil Service Commission, and 21 operators are already certified for the position.

In New York City 27 women were employed recently for the first time as changemakers for the city's rapid transit system; and in Connecticut, one transportation company employs women entirely on their street cars, even designing a special uniform for them. Dallas, St. Paul, and Minneapolis already have six women pushing street car controls.

Dallas lost 125 motormen and drivers to the armed forces, and wartime rationing boosted traffic on the common carriers 56 per cent. Given the same pay and seniority as men operators, the women have been specially trained to do a man-sized job in the city's transportation system, the association reported.

Police Officers

Women are now employed in four states and several cities to replace police personnel. Asheville, N. C., women handle all traffic at school crossings, and women selected by the Tennessee Valley Authority for public safety officers training school will be on duty at the project.

Connecticut and Rhode Island women police have been trained at the New York City Police Academy. Their work includes investigation of crimes and complaints involving women and minors, investigation of public places and recreation facilities to protect morals of women and children, supervision of parolees and taking custody of delinquent or neglected children.

Chicago's Park District Police Department has used 50 women service guards since early last year at school and church crossings and to direct traffic and guard cars in municipal parking lots. This city also has employed 400 women as florists, gardeners, storekeepers, crossing and service guards, and laborers for the park district.

Other essential jobs being done by women are street cleaning in Baltimore, garbage collecting in Waterloo, Iowa, and personal property appraising in Los Angeles County, Calif., and some Minnesota cities.

Gov. Dewey Urges Ample Housing

PREDICTING that the shelter needs in New York State during the next decade "might easily amount to 500,000 housing units, with the colossal employment and production such a building program would entail," Governor Thomas E. Dewey voiced on August 24 a strong plea for spacious community development. Speaking at the Nor-Ton Courts housing project, North Tonawanda, the Governor said, in part:

"It has been one of the ironies of American life that we have room and to spare, vast areas of ground, while millions of our people live huddled together in a minimum of space, deprived of light and air and other elements that should be the birthright of every American. To do away with that must become one of the functions of good government.

"It is my hope that after the war we may do our share of reconstruction by collaboration between state governments, local authorities, and private free enterprise. By zoning, state projects, and progressive legislation we must set new standards of conditions under which our people live. By fair treatment under just laws we must revive by every means in our power the interest of free enterprise in housing. . . .

"Let us all do our share in planning these homes wisely, inducing enterprise to build them and making our tax burdens and municipal programs provide the utmost encouragement.

"The civilizations of the past have been judged largely by their beautiful temples and monuments, many of whose ruins are still visible. These civilizations perished, in part, because their rulers, giving infinite thought to palaces, temples, and monuments, cared nothing that most of their people lived in hovels.

"Let us build an American civilization whose chief pride will be the beauty and comfort of even the smallest homes. It will be a task so comprehensive that it will imply everything in human prosperity and well-being. When we accomplish that we shall build the basis for a civilization imperishable, indestructible, truly fit for free people."

City Manager Appointments

Al Leland Baxter has succeeded Emery J. Toth as city manager of Big Rapids, Mich.

Horace S. Estey, manager of the Bangor Gas Company, has been appointed city manager, of Bangor, Maine.

H. Pierce Ford, former manager of Tallahassee and Lakeland, has succeeded G. H. McCoy as city manager of Bartow, Florida.

A. E. Langford has been appointed acting manager of Pensacola, Florida, to serve while George Roark is in the military service.

T. A. Ogletree is city manager of Sylacauga, Ala., a city recently added to our official council-manager list.

Frederick C. Peitzsch, who has worked with the U. S. Board of Investigation and Research, has been appointed city manager of Pleasant Ridge, Michigan, to serve while A. J. Berst is on leave to the U. S. Navy.

Raymond G. Ridgely becomes acting manager of St. Petersburg, Florida, following the resignation of Glenn V. Leland.

Murphy U. Snoderly, formerly manager from 1939 to 1941, has succeeded Hobart Greene as city manager of Johnson City, Tennessee.

Henry A. Yancey, city manager of Durham since 1935, has been appointed city manager of Greensboro, North Carolina, to take office on September 1. Mr. Yancey has also served as manager of Charlottesville and Petersburg, Virginia.

CLARENCE E. RIDLEY,
Executive Director, International City Managers' Association.

Municipal Bond Market

Some recent sales of new issues as reported in August issues of *The Bond Buyer*:

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$450,000	Waterloo, Iowa, Airport	1.0	11.16 Avg.	0.997
200,000	Sioux City, Iowa, Improvement	1.25	12.85 Avg.	1.095
127,000	St. Joseph, Mo., Refunding			
5,800,000	Philadelphia, Pa., School District, Refunding	1.25 1.5	11.5 Avg. 1-20 Ser.	1.22 1.449
1,200,000	Frankfort, Ky., Water Works and Electric Light and Power Revenue	1.75	7/25	1.73[2]
675,000	Louisiana, Highway	2.0	4.5-6.66 O.-A.	2.0833
210,000	Fair Lawn, N. J., School	2.20	14.25 Avg.	2.17
110,000	Springfield, Ohio, Hospital and Sewer Refunding	2.5	2-11 Ser.	2.5

WITHOUT VITAL STREET-CAR AND BUS SERVICE...

WE COULD LOSE THE WAR... PRODUCTION WOULD STOP...

THOUSANDS WOULD BE THROWN OUT OF WORK... MANY BUSINESSES

WOULD CLOSE THEIR DOORS... SUBURBS WOULD BECOME ISOLATED...

ACRES OF REAL ESTATE WOULD BECOME VALUELESS...

TAX COLLECTIONS WOULD DROP DRASTICALLY... YOUR CITY WOULD

DISINTEGRATE INTO SMALL COMMUNITIES... MODERN CITY LIFE, AS WE

KNOW IT... WOULD DISAPPEAR! CAN YOU AFFORD TO NEGLECT

YOUR STAKE IN TRANSIT, LIFESTREAM OF THE CITY?

HOW TO SAFEGUARD YOUR STAKE IN PUBLIC TRANSIT:

1. Co-operate closely with transit officials to conserve this essential service during the war.
2. Transit is also indispensable in peacetime. Therefore, include public transit in your postwar city-planning.
3. Make your local war transportation committee a permanent peacetime agency.

General Electric Company, Schenectady, N. Y.

● In 1941 public transit furnished 14 billion rides. Today, despite acute shortages of vehicles, man power, and repair parts, this industry is currently carrying people at the rate of 22 billions per year—equal to one ride every day for every man, woman, and child in cities of 25,000 population and over. And this vital service is being rendered at only a penny per passenger-mile.

GENERAL ELECTRIC

107-80-9660

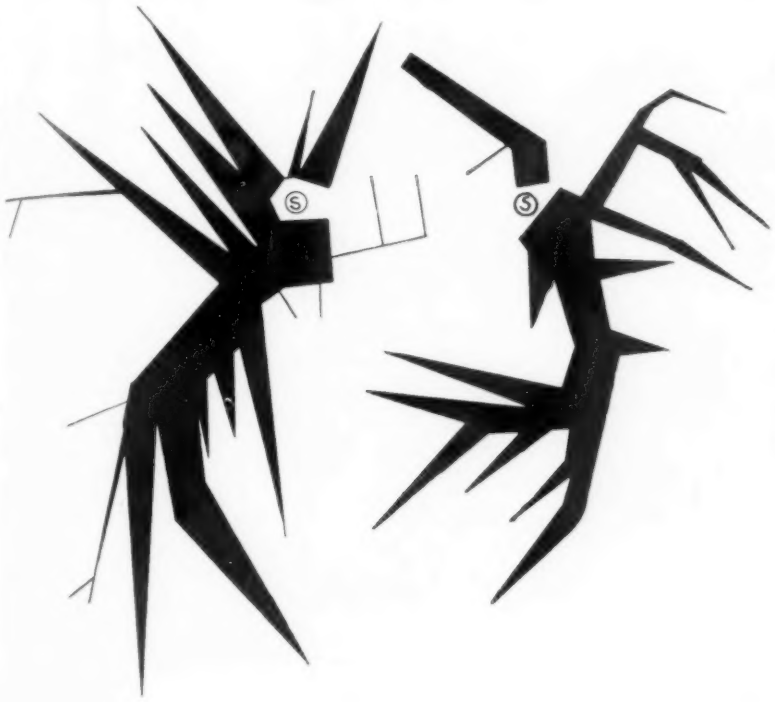
BUY WAR BONDS

Traffic Control and Facilitation

Conducted by Traffic Control & Facilitation Committee, Institute of Traffic Engineers, 60 John St., New York
Merwyn Kraft, Chairman, Karl A. Bevins, Jay A. Czizek, A. Wallace Gove, Ross C. Harger, Walter H. Klapproth, Theodore M. Matson, William R. McConchie, Henry W. Osborne, Earl J. Reeder, William J. Weller

Neither Wac, nor Wave

Nor Good Red Herring



THESE are neither Wac, Wave, Spar, nor Hula, but transit-volume flow-charts of student travel to the Hope High Schools in Providence and Mt. Pleasant, R. I., reproduced from the School Transportation Survey of the Providence War Transportation Committee. Similar charts, of less striking form, for the three other high schools of the city, appear in the report. Other charts show student residence zones, methods of transportation, and distribution of passengers at quarter-hour intervals.

To Relieve Wartime Pressure on Transit Lines

The practical value of such a study as a means of relieving wartime pressure on local transportation facilities is clear from the following excerpts:

"The objectives of the analysis were to establish the student travel loads on individual public transportation lines, the time interval within which students traveled from home and their direction of travel to particular schools. The results showed that approximately 46 per cent of the Providence Public High School students answering the questionnaires ride to school on buses and trolleys. At least 50.6 per cent of the riding students are transported to school on three street-car lines, two trackless-trolley lines, and in six special buses. The remainder are transported on practically all of the other Providence regular lines, plus lines serving outlying towns within the state. . . .

"A study of the transit-volume flow-charts shows that a redistribution of Classical and Hope Street High School students would materially ease the A. M. transportation situation. An ideal situation in school travel results when students travel in the opposite direction to the main flow of inbound A. M. passengers.

"Further relief might possibly result by requiring students from the northern and northwestern quadrants of the city, who now attend Classical and Hope Street schools, to attend Mt. Pleasant High School. Many of the students now being transported in special buses to Mt. Pleasant might then use regular trackless trolley and street car service to Central and Classical High Schools, if accommodations at these schools are available. In this way the number of special motor buses could be reduced, constituting a further saving in transportation materials, tires, and fuel. This would be a major contribution, beyond the aid contributed to the war effort last year when the present 9:30 A. M. opening was instituted."

Conclusions of Providence Report

1. An earlier closing of schools will probably not reduce the number of high school students working at such hours as to interfere with their regular mealtimes and studies.
2. Indications are that large numbers of students would be employed part-time by business and retail establishments if the schools did close earlier than 3:30 P.M.
3. There are inconsistencies in the travel habits of students attending the same schools and living in the same residence zones, for while some ride, others walk to school.
4. There is little relationship between student residences and the schools which they attend.
5. A redistribution of students would ease the local transportation situation but not to such an extent as to permit an 8:30 A.M. high school opening.
6. An 8:30 A.M. high school opening would raise the morning transit peak, overburden several regular transit lines and result in a most inefficient use of public transportation vehicles.
7. On the basis of the present U.E.R. facilities, maintenance procedures and manpower, an insufficient number of motor buses and trolleys are available for an 8:30 A.M. school opening service.

Recommendations

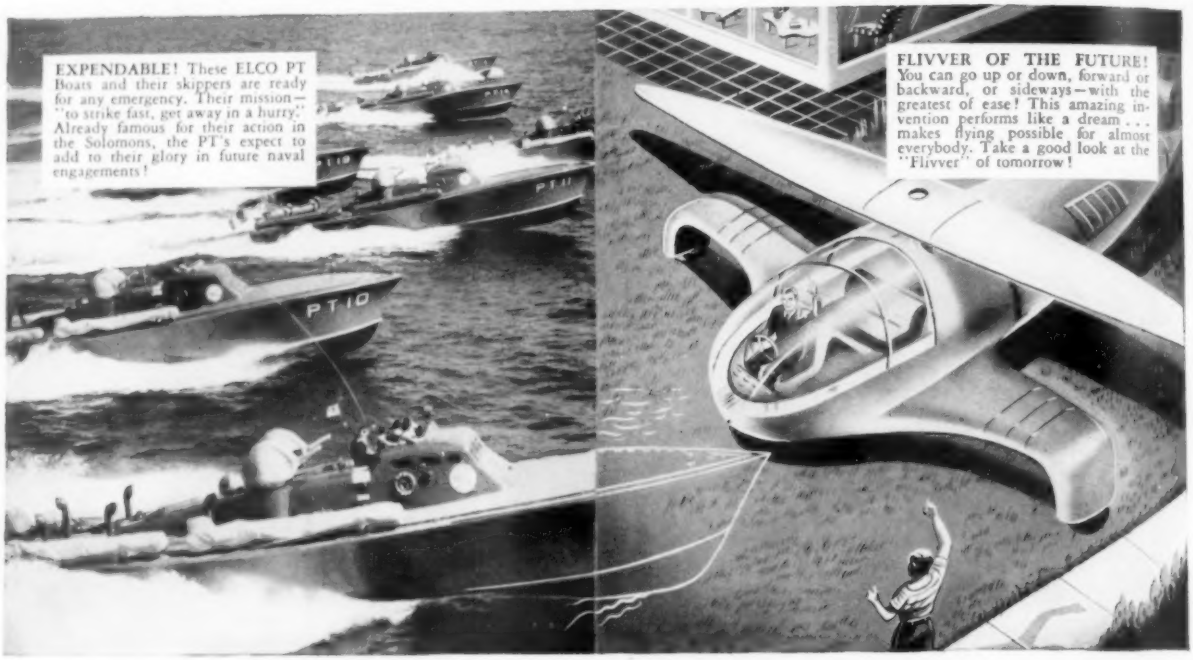
Retain the present 9:30 A.M. high school opening hour.

Redistribute students so that they attend high schools nearest their homes, in order to eliminate inbound crosstown travel by students in the A.M. travel period.

Prepare and conduct an educational program encouraging students to walk to school, especially those living within one mile of school.

THE SOLVAY PROCESS*

...KEYED TO TODAY AND TOMORROW!


EXPENDABLE! These ELCO PT Boats and their skippers are ready for any emergency. Their mission—"to strike fast, get away in a hurry." Already famous for their action in the Solomons, the PT's expect to add to their glory in future naval engagements!
PT 10
FLIVVER OF THE FUTURE! You can go up or down, forward or backward, or sideways—with the greatest of ease! This amazing invention performs like a dream . . . makes flying possible for almost everybody. Take a good look at the "Flivver" of tomorrow!

Today . . . Solvay Alkalies are making vital contributions to the freedom of the seas in the building of PT boats, heavy cruisers, submarines, minesweepers, carriers, and the Navy's new and deadly "submarine destroyers." On the sea, on land, and in the air, Solvay Products are today full-fledged war workers!

Tomorrow . . . Solvay will continue to combine its tremendous resources and broad technical information for the service of industry. In choosing your source of supply, consider Solvay's record of producing highest grade alkalies for over 60 years. Remember, the name Solvay is your assurance of quality!

SOLVAY

TRADE MARK REG. U. S. PAT. OFF.

* *The Solvay Process employs salt, limestone and ammonia to make Soda Ash, from which basic material Caustic Soda and other necessary alkalies are derived.*

SODA ASH • CAUSTIC SODA
AMMONIUM CHLORIDE • CAUSTIC POTASH
MODIFIED SODAS • AMMONIUM BICARBONATE
SODIUM NITRITE • PARA-DICHLOROBENZENE
CALCIUM CHLORIDE • CHLORINE • SALT
POTASSIUM CARBONATE

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET NEW YORK 6, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

Nonsense About the City of Tomorrow

By John Anderson Miller
Glen Ridge, N. J.

IF THE American people believe half of what they are being told about the marvelous scientific developments that will create new cities and new patterns for living in the post-war era, they are going to be sadly disillusioned. Writers with imaginations livelier than that of Jules Verne are busy assuring us that new machines, new methods, and new materials developed for war purposes will revolutionize our ordinary ways of life as soon as the war is over.

This is not post-war planning; it is simply post-war gassing. Experienced engineers view these super-duper ideas with skepticism. They know that we cannot telescope years of evolution into weeks or months. Many of our wartime technological advances can be utilized some day for improvement of our civilian life, but revolutionary changes will not come overnight.

Thales of Miletus discovered some of the basic characteristics of electricity about 600 B.C., but it was not until Thomas A. Edison built the Pearl Street generating station in New York City in 1882 that electricity became available in sufficient quantity to affect people's daily lives. Leonardo da Vinci worked out the fundamental principle of the flying machine in the sixteenth century, but it was not until the Wright Brothers installed an internal combustion engine in a flying machine in 1912 that any really successful flights were made. Observers of the epoch-making trip of the locomotive DeWitt Clinton on the Mohawk and Hudson Railroad in 1831 predicted that trains would soon be running at a hundred miles an hour all over the United States, but it was not until 62 years later that this speed was actually attained—and it is not usual even now.

Today we have a great deal more scientific knowledge than we had years ago, and people are more willing to accept new ideas. This should hasten the application of new inventions to our everyday needs. Nevertheless there are still practical and economic limitations on the speed at which we can make progress.

Most glamorous of the predictions about the post-war era are those dealing with air transport. We are told that our cities are going to be rebuilt, centering around their airports; that practically everyone will travel by air; that only the old fogies will continue to use surface vehicles.

This prediction indicates a curiously mistaken notion of the reason for the existence of a modern city. It is not simply a place of arrival and departure; it is a huge workshop. We have long passed the day of the waterfront town with no interest in anything except the coming and going of ships. Our cities have grown up because of man's need to associate with other men in his daily living. Only our western tank-towns and our suburban commuting towns have grown up around their railroad stations.

There would be no object in building a city around an airport even if everyone travelled by air. Moreover the aircraft pilots would have the devil of a time trying to land at an airport surrounded by the tall buildings of a modern city. When we rebuild our cities it will be for reasons other than a desire to center them on their airports.

Will Everyone Travel by Air?

The idea that everyone will travel by air in the post-war era is, itself, a whimsical notion. All the air lines in the United States carried a total of only 4½ million passengers in 1942, their biggest year. During the same period the Class 1 railroads carried 669 million passengers, and the intercity buses carried another 635 million. To handle all these people by air transport would mean to increase the present business by about 29,000 per cent. The actual increase in air travel in 1942 over 1941 was 10 per cent. At that rate we would reach the predicted condition in A.D. 4843. The rate of increase in air travel will, of course, be greater than 10 per cent a year when wartime restrictions are lifted, but it will be a long while before the air lines become a numerically important factor in transportation.

Will Helicopters Replace Automobiles?

Another colorful prediction regarding air travel concerns the use of helicopters to carry us back and forth to our work every day instead of automobiles, street cars, buses, or subway trains. We might, if we all lived in individual houses having flat roofs or spacious lawns, find space to accomodate these machines at home, but what would happen when we arrived at our place of work? To store during working hours enough helicopters for the daytime inhabitants of a 10-story office building would require a 50-acre parking lot.

The likeliest field for the use of helicopters is in specialized service such as carrying mail or express. Application has already been made to the Civil Aeronautics Board for permission to operate them between some 400 post offices and railroad stations in the New England States and New York to carry mail and express.

Will Americans Own 50,000,000 Cars?

Not so glamorous as the air transport ideas, but still quite exicting, are the predictions concerning marvelously expanded use of automobiles. It is said that the immense facilities that have been created for the production of light-weight metals, synthetic rubber, and airplanes will be converted to the construction of new types of automobiles that can be built for almost nothing and run for even less. Instead of our present 25 million passenger cars it is estimated that we shall have 50 million of the new streamlined designs, with the driver at the front and the engine at the rear.

There is enough factual basis for these predictions to make them rather plausible. The production facilities will probably be available. The high-octane gasoline now being manufactured in large volume for our air forces is a better automobile fuel than we have been accustomed to use in the past. Engineers have always known that the front-end radiator was contrary to the basic principles of streamlining. A new "tear-drop" design with genuine aero-dynamic lines and possibly with tires of synthetic rubber, seems a likely development after the war.

From these technical possibilities to the realities of a 50-million car era is a long step. Automobile manufacturers have saved their 1942 jigs and dies, and are planning to bring out slight

let's break it down...

We've only been knocking at that door . . . Midway . . . Guadalcanal, Attu, Buna, Munda . . . Tunisia, Pantelleria, Sicily. . . .

Magnificent actions all . . . but only steps that have brought us to the threshold of Victory.

Now it's here. *Invasion!*

But we've got to back these fighters with a fighting home front.

The 3rd War Loan Drive is on. The quota is $15,000,000,000.

The United States Government is asking you to invest in at least an *extra* $100 bond during September. But the job doesn't end there. We've got to get our family, friends and fellow employees to invest in their share of these victory-producing bonds and back the attack that has brought us this far.

Remember, this is what we've been waiting for.

This is *invasion!*

back the attack with war bonds!

HAZARD INSULATED WIRE WORKS
DIVISION OF THE OKONITE CO., WILKES-BARRE, PA.
Insulated wires & cables for the electrical industry

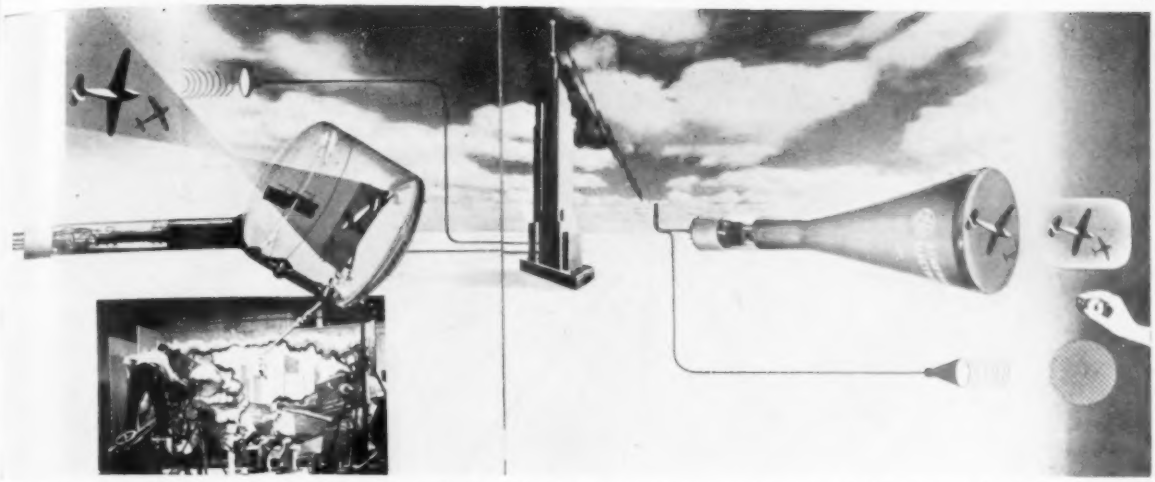


Illustration from the Television Section of General Electric's modernistic booklet "Television—a New Science for a New World."

modifications of their 1942 models as soon as the war is over. Considerable time will be required for the development of radically new designs. When they come, as they will eventually, they may be less expensive than the models to which we are accustomed or they may not.

Large production facilities for light-weight metals, synthetic rubber and the like do not necessarily mean that these materials will be cheap. Labor cost is a big item. This may decline after the war. If it does, however, it will reduce the purchasing power of the prospective buyers of automobiles. Even though a new automobile will probably be one of the first things the average American will want to get when the war ends, there is reason to doubt that this will result in doubling the number in service.

The whole idea of 50 million cars is inseparable from the idea of a vast new system of highways and super-highways, along with tremendously increased parking space in urban areas. The super-highway idea, of course, antedates the present wave of flamboyant forecasts. At the New York World's Fair in 1939 the most popular exhibit was the "Futurama," showing the city of the future devoted almost entirely to commercial activities, and residences scattered over a wide surrounding area reached by automobiles operating over an intricate system of superhighways. Everyone will agree that this dream of the future has many attractive aspects, but the cost of translating the dream into reality would be staggering.

It has been estimated that a typical city of 400,000 population would require some 200 miles of super-highways costing $600,000,000 to carry out the "Futurama" plan. This works out to an average of $1,500 for every man, woman and child in the city. Any plan which cannot be paid for is only a dream. The difficulties in the way of a big super-highway program cannot be got over by the simple assumption that we shall have to have a vast amount of public works to take care of the millions of men released from military service and war industries. That demands a kind of work that puts a maximum of the money into the pockets of the workers. Super-highway construction does not do so A large part of the money goes for such purposes as acquiring property rights.

Television

If the helicopter idea and the 50-million car idea prove impracticable, the post-war guessers have another plan. Television will eliminate the need for much of our present coming and going. Movies, baseball games, prize fights, and all kinds of things which we have been accustomed to go to see will be shown in color on screens in our own homes. It will be quite possible, they say, for the housewife to do her marketing without going to the store and looking at the actual display of fruits, vegetables and meats on the counter. She will make her selection by television. She will even be able to buy a new dress at her favorite shop by television.

This prediction is probably closer to the mark than most of the others. Government figures show that 83 per cent of all the homes in the United States now have radio receiving sets, as compared with only 40 per cent in 1930. This is so near to being a situation where "everybody" can listen to radio programs that we can quite easily imagine a day when "everybody" will have television. It should be remembered, however, that millions of the present radio sets are of the cheap, midget type, while television sets are likely to cost upward of $200 apiece, which could slow down purchasing.

Architecture, too, is to be revolutionized in the post-war era. It is claimed that our present houses are hopelessly antiquated, both as to materials of construction and design. We should adapt our houses, we are told, to the many mechanical and electrical contrivances which science has given us. That certainly is making a god out of the machine with a vengeance. The house ceases to be a place in which to live pleasantly and becomes a mere setting for domestic machinery. Why not adapt the machinery to the building rather than the building to the machine?

The greater availability of certain materials in the post-war era will undoubtedly encourage their wider use, but it is very unlikely that we shall want to tear down all our present structures and rebuild with new materials. Glass brick and light-weight metals have disadvantages as well as advantages. The celluloid collar had a limited period of popularity.

Certainly there will be a desire for better living when the war is over. The shortages and denials of today are building up a strong urge to buy things as soon as possible. Nobody knows the extent to which this urge can be gratified. The idea that everyone can redeem his war bonds on the day after the armistice and thereby acquire a lot of money to spend is a dangerous illusion. The effect would be so inflationary that the money would not buy anything to speak of. Though V-day may assure us the four freedoms of the Atlantic Charter, it won't assure us freedom from work. We shall have to build our new pattern for living patiently, step by step, and brick by brick despite the marvelous developments of science.

CAN YOU BEAT IT! THOSE DURO-TEST LAMPS ARE STILL BURNING!

Leaking gas—a terrific blast—wing nuts ripped off—glass lenses shattered—and through it all the Duro-Test Lamps still burned! That was an actual experience reported to Mr. Robert A. Mitchell, Traffic Engineer of Philadelphia, and was one of the reasons why he said, " . . . we have found that these lamps met all expectations." Their dependability guards life and property and their durability cuts down your replacement cost, saving man hours, tires and gasoline so urgently needed for our war effort.

Duro Test Extra-Duty Traffic Lamps are rated at 4,000 hours, and are supplied in 40 or 60 watt size for base down or horizontal burning.

Another **Duro-Test** contribution to economical lighting—Our 4,000 **Hour Street Series Lamps.** They are the answer to your street lighting problems.

Both Lamps are sturdy in construction and fully backed by our one-year free replacement guarantee.

Write for Catalog No. 43C, showing full line of regular and special purpose lamps.

DURO TEST CORPORATION DURO TEST **NORTH BERGEN, NEW JERSEY**

Copyright 1943 by the DURO TEST CORPORATION

Outdoor Lighting

Streets—Highways—Floodlighting

A.P.I.C. Throws a Wrench at Modern Luminaires

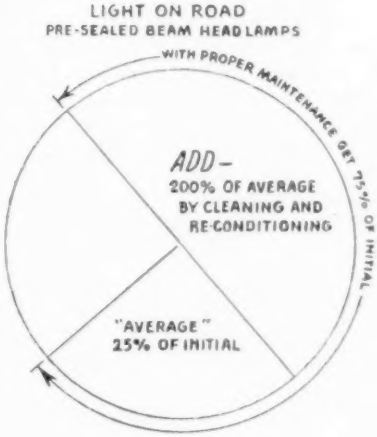
A MONOGRAPH entitled, "Road Travel at Night—Past and Present," has just been issued by the American Petroleum Industries Committee, New York. It opens in the city nights before there were street lights and soon reaches the year 1700 when the moon, stars, house windows, and portable lanterns were first gilded by street lights.

One might reasonably expect that American Petroleum Industries Committee (A.P.I.C.) would look with favor on the rapid advancement in street-lighting equipment, which before the war had already done much to make night automobile travel safer and more comfortable. The contrary, however, is the case as this first mention of traffic-safety lighting proves:

"In recent years, the lighting of rural highways has been advocated by certain interests on the ground that it would reduce motor vehicle accidents at night. To stimulate sales of equipment and power, these interests have made some experimental installations at their own expense. In most cases, maintenance costs have proved prohibitive, averaging about one-third the initial installation expense."

Let us see if this selfish agitation for the lighting of major traffic arteries was justified, for THE AMERICAN CITY does not recall any claims that all the rural roads should be lighted. Traffic deaths on these rural roads and highways in the five years since, and including 1938, were as follows: 13,050, 12,800, 13,500, 14,220 and 11,600 in 1942. This considerable annual sacrifice of life from a known cause, the automobile, was disturbing to a great many organizations besides the electrical manufacturers. These organizations included town and state governments, chambers of commerce and merchants' organizations, women's clubs, and the Executive Office of the Federal Government.

Analysis showed, as nearly everyone knows, that more than half of the accidents and killings happened at night when traffic volume is lightest. This is



the experience in cities as well as in the rural areas. Grand totals of traffic deaths for the United States rose from 19,400 in 1924, to 36,100 in 1943, to 39,970 in 1941. The particular menace of night driving received increasingly wider recognition, and it was seen that if the streets and possibly 20,000 miles of highways could be made nearly as safe at night as by day, the largest saving in lives would by their achievement be attained.

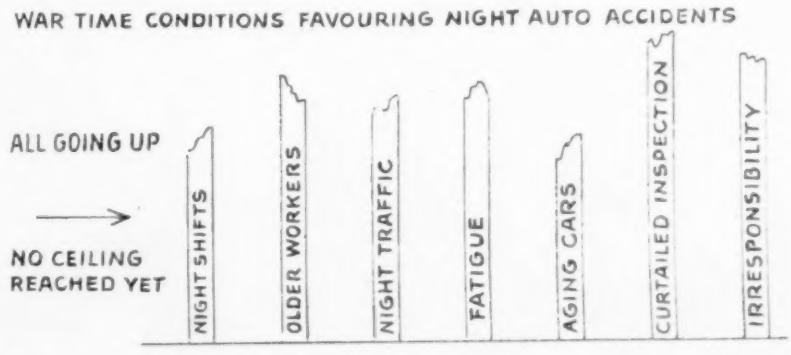
Manufacturers Developed New Luminaires

Being in the business of lighting roads and streets, the manufacturers of outdoor lighting equipment quite possibly foresaw an eventual heavy demand for equipment suiting the requirements of fast heavy-motor traffic, which has the common characteristic of rather unpredictable driving habits. The fact that the General Electric Co., the Westinghouse Electric and Mfg. Co., the Union Metal Mfg. Co., the Line Material Co., and some others, possessed the knowledge and the drive actually to design, manufacture, and market a new line of lighting equipment (1) to produce adequate visibility, (2) to be as economical as possible by utilizing as much of the light as shielding reflectors and refractors could caputre, (3) to provide further economy by using larger and far more efficient lamps, (4) to reduce glare to a minimum by raising mounting heights to hitherto unthought of elevations—calls for a measure of public gratitude as well as for commendation for the type of American business initiative that tends to maintain that full employment of productive forces so ardently advocated as the primary objective of the postwar world. The manufacturers did provide this modern lighting equipment.

Who Produced the Traffic Congestion?

The electrical manufacturers did not produce the 28,000,000 automobiles and 5,000,000 commercial trucks which are the traffic problem. It is a 24-hour problem, and the U. S. Department of Commerce chart portrays it. An analysis of it issued by the Bureau of the Census on July 31, 1943, points out that:

"The hour of the accident is of particular importance, since visibility, volume and type of traffic, and driver fatigue vary with the time of day. It would appear from these figures that the waning visi-



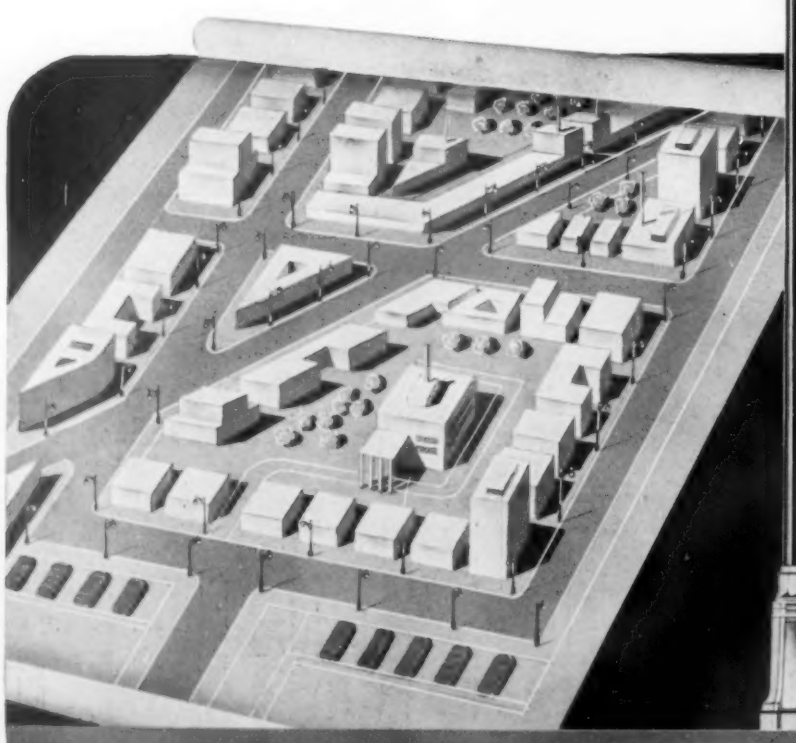
Blueprint for Future City Planning

SOMEDAY, maybe before you suspect, the war is going to end and all the accumulated wants of all the people will demand satisfaction. Traffic will resume on your streets, highways, and in the air—in greater volume than ever before. Safety, health, and better living conditions will take precedence over high volume production and military requirements. TOMORROW will then be TODAY, and you will want to be ready.

Here, then, is one idea for you—a blueprint for future city planning—built around modern street and highway lighting . . .

Many leading municipal officials, looking toward peacetime, are surveying their lighting needs with an eye toward retaining new increases in population by making residential sections more attractive, and toward inviting traffic and trade by eliminating night driving hazards. They're deciding *now* exactly where to make new installations, what old installations must be replaced—and they're getting the *facts* on the latest developments in street and highway lighting methods. Once they have this knowledge they will have a sound basis for further civic improvements.

Should you decide to follow their lead, you are invited to avail yourself of Union Metal's 36 years' experience in the design and construction of lighting standards. For although all our production facilities are being devoted to the war effort, the advice of our engineers can be invaluable to you in planning for the future of your town.



ARMY E NAVY M

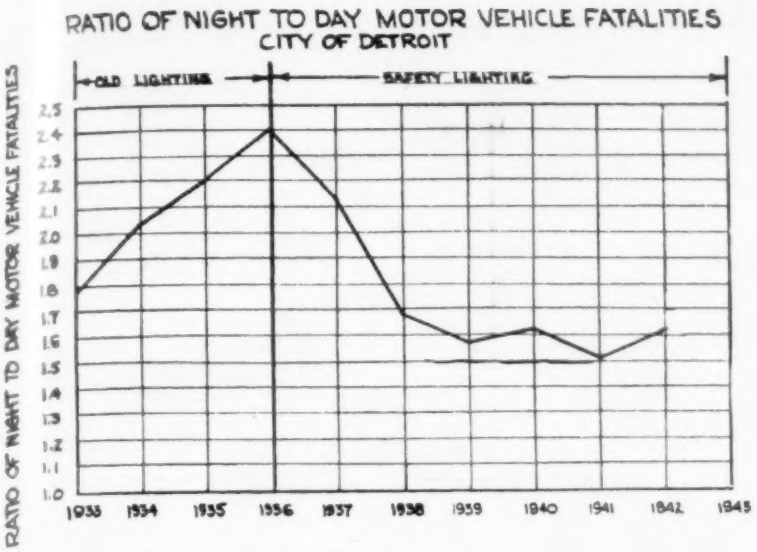
The

UNION METAL

Manufacturing Company

Largest Producer of Street Lighting Standards

CANTON, OHIO



L. J. Shrenk Detroit Lighting Commission

bility at dusk plays an important part in traffic accident fatalities. Also, the peaks are not so high when the daylight hours are longer."

The price in deaths of inadequate lighting and the profit in lives saved by adequate lighting was presented in THE AMERICAN CITY with charts last month by Louis J. Schrenk, General Superintendent, Detroit Public Lighting Commission. *Adequate visibility tends to make the night-time accident experience comparable with that of the daytime.*

On the other hand, as A.P.I.C. warns, it does cost money to achieve this. To light a couple of million miles of rural roads would cost maybe 3½ billion dollars a year—an unheard-of expenditure for a constructive purpose. Nobody yet, this magazine believes, has advocated lighting rural roads indiscriminately. Suggestions have been made that 20,000 miles of heavy-traffic highways be lighted. Does A.P.I.C. favor this more reasonable economic proposal which would illumine the traffic approaches to most cities? Apparently not, because:

"Highway lighting as a safety measure has not worked out as well as its advocates hoped it would. Although only a small percentage of the nation's mileage of streets and highways is lighted, 40% of the motor vehicle accidents which occur at night are on well-lighted city streets or at illuminated highway intersections."

It would doubtless be conceded that the likelihood of the collision would not be reduced by first putting out the street light. Accidents do occur on lighted streets—even sunlighted streets. Such accidents are due to causes other than insufficient visibility. "The human equation is most difficult to solve," says Mr. Schrenk. "Many persons will drive cars through fogs, rain, and icy streets without mishap; yet on an improved, spacious highway, during clear daylight hours, they find themselves in a serious accident. This is pointed out to warn against forming conclusions by comparing traffic accidents over short periods of time."

As to the statement that 40 per cent of motor-vehicle accidents occur on lighted city streets, it would be statistically accurate to report that in the years 1938-41, traffic fatalities totaled 53,570 in all cities and 85,870 in rural areas; or that 38 per cent of traffic fatalities occurred on city streets, which are expected to be lighted at night, and where congestion is expected to be most severe. In 1942, there were 28,200 fatalities of which 41 per cent occurred in cities.

Did the night accidents happen because the streets were lighted or for other reasons? Listen to A.P.I.C.:

"Even had highway lighting experiments been more successful, it would be financially impossible to light all roads. This fundamental fact creates a dilemma, for while the heaviest night traffic is on the trunk highways, the most dangerous roads at night are the lightly traveled, narrow, slippery, high-crowned, and poorly surfaced rural highways. The main roads don't need to be lit, while the light traffic on the local roads doesn't justify their being lighted."

The next A.P.I.C. statement is the sensible proposal that where highway lighting is uneconomical, reflector buttons be installed to illuminate the center strips and stripes and outline the edges of the roads. There should certainly be much greater use of reflectors, and the delineators made by Signal Service Corp., Newark, N. J., and the Scotchlite for legible traffic signs made by the Minnesota Mining & Mfg. Co., Minneapolis, merit creditable mention in this connection.

The A.P.I.C. statement continues:

"The ideal method of lighting a highway at night with maximum economy would be through the headlights of vehicles, provided they could flood the highway sufficiently far in advance with adequate, evenly distributed, glareless light. Vehicle light improvements are leading toward this objective.

"It would appear, therefore, the part of wisdom to abstain from launching any large scale highway lighting projects designed primarily to promote the sale of lighting equipment and power, and instead to exploit fully the improvements in headlight equipment and in highway engineering which will be developed further in the post-war period."

After the war, vehicle lighting on a new plane may be one of the constructive innovations. Such lamps would be a boon on crowded, unlighted, or ill-lighted traffic arteries, as well as on "the lightly traveled, narrow, slippery, high-crowned, and poorly surfaced rural highways." Can such lighting be self-sufficient? Perhaps. Many, however, will ask, "when"? In the meantime let us make use of the continuously improving methods of street and highway lighting which have absolutely proved their efficiency in reducing the hazards of night driving.

COURTESY OF SIGNAL SERVICE CORPORATION, IRVING, N. J.

Delineators Marking an Unlighted Highway.

there IS a big difference

IN STREET LIGHTING FILM CUTOUTS

DANGEROUS ARCS NOW ENDED

Immediately upon failure of a lamp filament, the Westinghouse Film Cutout breaks down and forms a positive and durable fuse. There is no arcing . . . and less than 2/10ths of a volt voltage-drop across the short circuit. We can ***prove*** this . . . right in your own office.

In line with wartime conservation, you can eliminate unnecessary line losses . . . destructive overheating of lamp sockets and receptacles . . . also radio and telephone interference . . . with Westinghouse Film Cutouts. If you have tried them, you know this to be true. If you haven't, you are due for a pleasant surprise.

Due to the use of a specially prepared aluminum powder, inserted between aluminum discs and held in place by an asbestos washer, Westinghouse Cutouts are setting new performance standards. They are unexcelled as insulators while the lamps are operating. But let a lamp fail, and the cutout breaks down immediately (within 3 to 5 cycles). The resulting fuse is positive and permanent, free from arcing and appreciable voltage drop.

Available for all standard voltages, Westinghouse Film Cutouts are thoroughly tested at the factory, then protected in shipment against vibration and damage. Five per cent of each lot manufactured are subjected to a high voltage breaking test . . . and ***must break down*** in this test, or the whole lot is rejected.

But get all the facts! Or better yet, let us send you a box of these Westinghouse Film Cutouts, with our compliments. Write to Dept. C. F., Westinghouse Electric & Mfg. Company, Edgewater Park, Cleveland, O.

Westinghouse PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE *Lighting Equipment*

Prepared by
FRANK B. WILLIAMS
Author of "The Law of City Planning and Zoning"

Zoning and Planning Notes

With the cooperation of
ALBERT S. BARD
Counsel,
National Roadside Council

Non-Conforming Zoning Use—Increase in Volume

MASSACHUSETTS. — *Building Commissioner of Medford* v. *McGrath*, Supreme Court, December 1, 1942, reported 45 N. E. 2, 265.

The premises occupied by the defendant McGrath were used for a riding school before the adoption of the present zoning ordinance. The school is therefore a non-conforming use in the district in which it is situated.

The number of horses kept on the premises has increased from two to twenty or more.

The court holds that the school may continue. There has been no change in use. There was no alteration in the building. A non-conforming use of the same premises may be not only continued but also increased in volume.

Parking Meters

MICHIGAN.—*Bowers* v. *City of Muskegon*, Supreme Court, June 7, 1943, reported in 9 N. W. (2d) 880.

This suit is brought to test the validity of the Parking Meter Ordinance of the city of Muskegon.

The statutes of Michigan provide for the collection of certain specific taxes at the time of registering a motor vehicle, "which shall exempt it from all other taxation, either state or local." The parking ordinance in question does not levy a tax; it imposes a fee for the voluntary use of a particular space for a designated period. There is no conflict between the ordinance and the statute.

The ordinance further provides that the coins to be deposited in the meters are "to provide for the proper regulation and control of all parking and traffic upon the public streets and alleys, also the cost of supervision and regulating the parking of vehicles in the parking meter zones created hereby, and to cover the cost of purchasing, leasing, acquiring, installation, operation, maintenance, supervision, regulation of the parking meters described herein, and other traffic control devices and regulations.

It is an accepted rule that a tax must be upheld on the basis of the taxation power and cannot be sustained on the basis of the police power; and that it is a valid police regulation only if the revenue derived is not disproportionate to the cost of regulation. It cannot be said from reading the ordinance that it was contemplated that excessive revenue would be produced.

The ordinance makes a unit charge of 1 cent in some places and 5 cents in others for like periods. This is reasonable classification.

Eminent Domain—Damages

NEBRASKA.—*Huesley* v. *Department of Roads and Irrigation*, Supreme Court, May 14, 1943, reported in 9 N. W. (2d), 523.

This is a proceeding to determine the amount of damages due one Huesley for the taking of an easement for a highway across his land. The amount fixed was about $5,000, less about $2,000 for the construction, at the expense of the State and by it, of a stock pass for the use and benefit of Huesley, or about $3,000 in money. Huesley claims that the deduction of $2,000 is improper, and that he is entitled to the full $5,000 in money.

This claim the court sustains, holding that without the land owner's consent, which was not obtained in this case, no deduction for such construction could be made by the state, and the full amount of damages of $5,000 must be paid Huesley.

EDITOR'S NOTE.—This decision is an affirmation of the well-settled law of this country that under our constitutions, national and state, when the nation or the state takes property by condemnation proceedings, payment must be made for it in money. The reason for this interpretation of our constitutions is clear. In no other way can the owner of property taken be sure of receiving just and full payment for the property taken. For instance, let us suppose that a municipality wishes to make an improvement of a large tract of land and, lacking ready money, decides to issue bonds for part of the cost of the improvements, paying the land owners, in whole or in part, with its bonds. If, in such a case, the bonds cannot be sold at once for their face value, the land owner will not be able to obtain the full value of his property, to which he is entitled at once.

This principle, however, has its disadvantages. For instance, where property is badly subdivided, and lots in the subdivision here and there are sold, and the other lots are unsaleable, and the owners of some of the lots default in taxes, and perhaps disappear, the whole tract is blighted and the only way to restore it to usefulness to the owners and the community is to take the whole tract, eliminate the existing boundaries, and replan the whole area, with perhaps bigger lots, properly located with regard to streets, wider roads and more public open spaces; then restore it to the original owners, subject to charges for the cost of replanning. If there has been little or no building on the tract this can be done, the cost of replanning being small, without expense to the community or the use of its credit or capital.

This is what is done, under the equivalent of our police power, in many foreign countries, by the German Lex Adickes, or similar statutes elsewhere. In this country this procedure is not open to us; for the changes in the boundaries of the lots of the various owners would mean the substitution in some cases of a part of the land of one owner for that of another; which our courts would probably hold was taking land and paying for it, not in money, but in other land.

NEBRASKA.—*Scully* v. *Central Nebraska Public Power and Irrigation District*, Supreme Court, April 9, 1943, reported in 9 N. W. (2d) 207.

This is an action to recover damages from the Power and Irrigation District resulting to Scully from the construction of a dam and reservoir by the district, and the condemnation and removal by the district of the Union Pacific railroad tracks from the town in which Scully's property was located, thereby entirely depriving the town of its railroad services, to the great damage of Scully's land located in the town.

The court holds that Scully is not entitled to any damages. It is quite true that, to constitute a taking of property, for which, under our constitutions, compensation must be paid, there need not be any actual taking of that property, if damaged; but the damage must be special to the owner, different from that to the general public. There was no such special damage in this case; the injury Scully suffered was common to the whole town.

It should be noted that had the railroad relocated itself (pursuant to authority), the land owners would have had no claims against the railroad for lessened value of their land; hence they have none against the power district which caused the railroad to move. The railroad company is under no obligation to the individual property owners to continue the use of a track or station; nor would an injury to them arising from such an act be special to them.

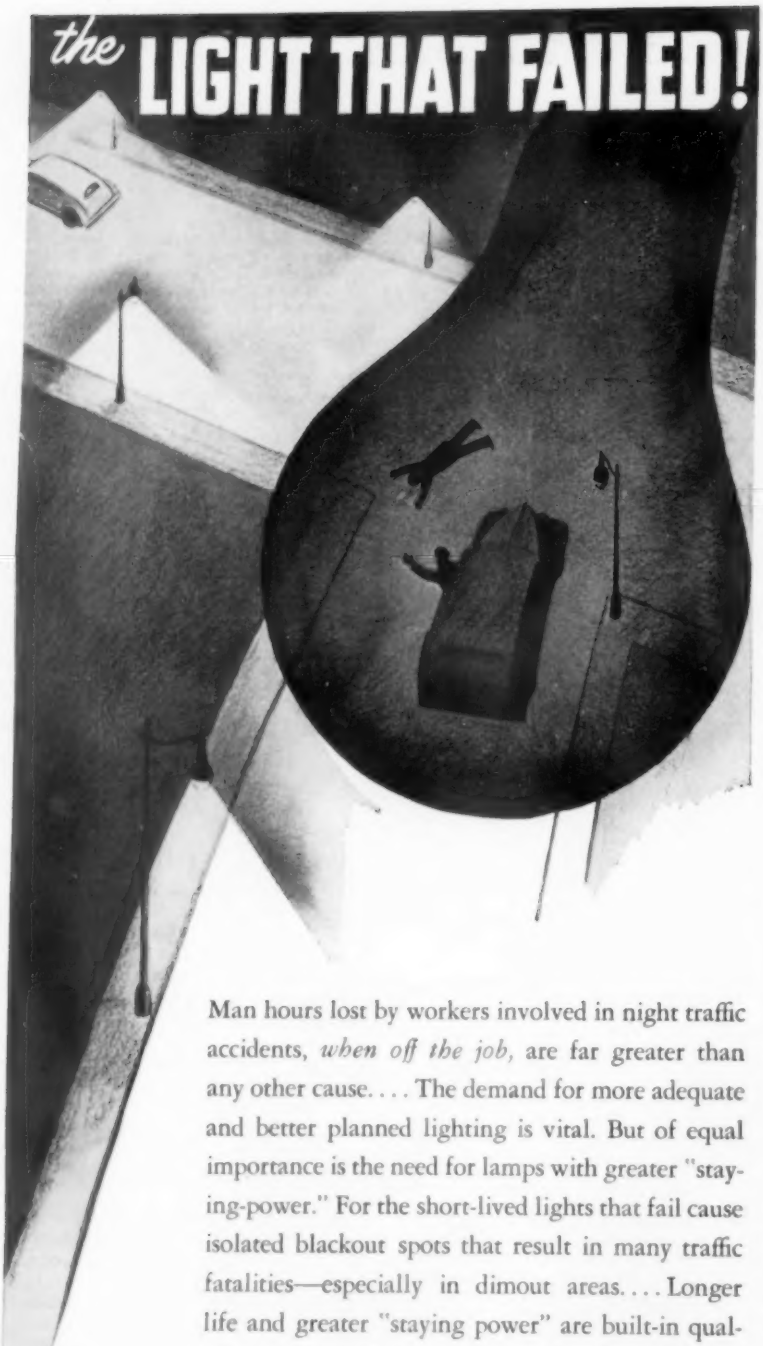
Finally, Scully charges that the storage of two million acre feet of water above the dam erected by the district created a hazard to the property of the town by reason of the danger of floods which would follow a breakage of the dam, and the fear of such a break lessened the value of his land. A general, ill-defined fear that the dam, however well constructed, will at some time break, is purely speculative and does not furnish any basis for a claim to damages.

BACK COPIES WANTED

Does any reader have a copy which he is willing to sell of any or all of the following issues of THE AMERICAN CITY?

April 1926 May 1926 September 1927 February 1928 July 1928 March 1929 May 1934 June 1940 February 1942

Please quote your price to Circulation Department, The American City, 470 Fourth Avenue, New York 16, N. Y.



Man hours lost by workers involved in night traffic accidents, *when off the job,* are far greater than any other cause. . . . The demand for more adequate and better planned lighting is vital. But of equal importance is the need for lamps with greater "staying-power." For the short-lived lights that fail cause isolated blackout spots that result in many traffic fatalities—especially in dimout areas. . . . Longer life and greater "staying power" are built-in qualities of Slater Lamps. Sturdy, durable, delivering more lumens per square foot at lower cost, they provide maximum lighting efficiency under the severest street lighting conditions. *Catalog on request.*

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

SLATER ELECTRIC & MFG. CO.
BROOKLYN, NEW YORK
MANUFACTURERS OF STREET LIGHTING LAMPS, AND PRECISION ELECTRONIC TUBES

SLATER

Tomorrow's Job in Housing and Planning

OUTLINING a six-point program for post-war rebuilding of New York State communities and insuring better housing standards, Ira S. Robbins, Acting State Commissioner of Housing, urged on August 19 that work begin immediately in every locality on the study and preparation of forwardlooking post-war programs through the cooperative action of business, finance, municipal officials, labor, and civic groups. Emphasizing particularly the need for joint action by local leaders, Commissioner Robbins declared that no progress will be made if such programs do not come from the communities themselves but are imposed by outside groups or agencies.

Addressing a conference in Syracuse of representatives of local housing authorities from all sections of the state, Commissioner Robbins made the requirement of cooperative local planning his first point. The other five recommendations were:

Complete revision of regulatory laws, such as the multiple dwelling and tenement house laws, local zoning ordinances, and building codes; and the adoption of such codes and ordinances in all localities where none now exist.

Developing effective county and regional planning to check haphazard planless growth on the fringes of cities.

Setting up active city planning programs in larger communities and if necessary, the extension of state aid to make this effective.

Establishing close cooperative relationships between all government housing and planning agencies with the private home building industry.

Leadership by local housing authorities in developing joint community action in these fields.

Stressing the need for comprehensive municipal and county planning, Commissioner Robbins concluded:

"We hear much of building a post-war shelf of private and public work projects to avert economic collapse when the war ends and to ease the transition into a peacetime economy. Many projects are being planned. There is to be building of roads, public works, and homes. I for one would feel much more sanguine about the post-war program and its probable accomplishments if I knew that the projects that are being planned now are keyed into a sound, carefully worked out program for the future development of the community. If they were planned in these terms we could rightfully call them permanent improvements that will serve the long range needs of our communities. Buffalo and Syracuse are working along these lines. It would be a splendid thing for the state if its other cities were to proceed on the same principle."

Municipal Law Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, WASHINGTON, D. C.
CHARLES S. RHYNE, Executive Director

Assessments—Failure of City to Collect—Liability of City for Shrinkage in Value

City is liable to holders of paving bonds for damages caused by the shrinkage in value of certain assessments where ordinances had created an authorized trust obligation on part of city to assess and collect assessments against abutting property and city had delayed in commencement of suits to collect assessments with the result that outstanding and unpaid bonds were practically worthless. *Gray* v. *City of Sante Fe*, 135 Fed. (2d) 374 (U. S. C. C. A. 10th Nov. 26, 1941. Reh. Den. June 8, 1943).

Attorney—No Recovery in Quantum Meruit Where Fees Fixed by Statute

Attorney cannot recover on a quantum meruit basis a percentage of delinquent taxes collected by him, as there can be no implied contract for payment of a larger sum where attorney's fees which city could pay are fixed by statute. *Dodson* v *City of Del Rio*, 172 S. W. (2d) 125 (Tex. Ct. of Civ. App. May 5, 1943. Reh. Den. June 2, 1943).

Barbershops—Ordinance Regulating Business Hours

Ordinance making it unlawful to permit barbershops to be open for business before 8 A. M. and after 7 P. M. with certain exceptions is unconstitutional as being an unreasonable exercise of police power. *City of Cincinnati* v. *Correll*, 49 N. E. (2d) 412 (Ohio, June 2, 1943).

Bonds—Issued to Meet Judgments Against City—"Governmental Purpose"

Where ordinance provides for bonds to be issued to meet indebtedness of city evidenced by judgments which had been obtained against it, such bond issues are valid even though attempts to meet indebtedness interfered with the city's obligations, as obligations on which the judgments were obtained were for "governmental purposes." *Tuggle* v. *City of Barbourville*, 171 S. W. (2d) 1008 (Ky. May 18, 1943).

Claims—City Employee Injured by Defective Drill—Statutory Time Limit for Notice Exceeded

City is estopped from demanding strict compliance with the statute where city employee injured by latent defect in drill was lulled into sense of security so as to excuse him for failure to bring claim within 30 days limit by city physician's statements concerning nature and extent of injury, and by action of city in continuing to pay him after injury. *City of Waco* v. *Thralls*, 172 S. W. (2d) 142 (Tex. Ct. of Civ. App. May 20, 1943. Reh. Den. June 10, 1943).

Condemnation—Land to Be Used for Airport—Computation of Life Interest

In proceeding by city to condemn land for an airport, widower holding a life interest is not entitled either as independent executor or as life tenant under wife's will to have awarded to him unconditionally the damages awarded for devised land condemned since the value of life estates in land condemned should be measured by reasonable rate of interest and discount and not by legal rate of six per cent. *White* v. *City of Waco*, 171 S. W. (2d) 514 (Tex. Ct. of Civ. App. April 15, 1943. Reh. Den. May 27, 1943).

Fire Truck Accident—Traffic Light—Testimony of Witness from Hospital Bed

In action against defendant for failure to obey traffic light at intersection which resulted in collision with fire department car, testimony of patient in hospital room overlooking intersection that fire department car did not have green light should not have been rejected by judge after judge's observation of intersection from hospital room, as this constitutes prejudicial error. *City of Columbus* v. *Carter*, 49 N. E. (2d) 186 (Ohio App. Jan. 28, 1943).

Jails—City Manager and Police Chief Liable for Death of Prisoner Caused by Beating

A city manager and police chief of City of Oakland are liable in damages for death of city jail prisoner who was fatally beaten by police officers, since they failed to exercise their power to suspend police officers known to be incompetent, and the fact that no recovery could be had in this particular situation under the respondeat superior doctrine and that the police officers could appeal to the Civil Service will not relieve them from liability. *Fernelius* v. *Pierce*, 138 Pac. (2d) 12 (Cal. May 18, 1943. Reh. Den. June 14, 1943).

Jehovah's Witnesses—Distribution of Literature Not Restrained Under Void Ordinance

Ordinance which vested arbitrary discretion in chief of police in granting or refusing permit for use of streets in sale of literature is unconstitutional and therefore Jehovah's Witnesses cannot be restrained under such an ordinance from selling their literature on the streets. *Hord* v. *City of Fort Myers*, 13 So. (2d) 809 (Fla. June 4, 1943).

Parking Lot—Burden on City to Establish Dedication to Public of Private Property Used as

Where city claimed title under an implied dedication to public, city has burden of proof to establish such dedication in suit against city by the owner to determine ownership of strip of land which was used as parking lot with consent of the owner. *City of Miami* v. *Travis Co.*, 13 So. (2d) 700 (Fla. May 25, 1943).

Parking Meters—Ordinance Authorizing Installation of

Ordinance authorizing the installation of parking meters and charging a fee for parking is a valid exercise of city's police power to regulate parking on its streets. *Wilhoit* v. *City of Springfield*, 171 S. W. (2d) 95 (Mo. App. May 3, 1943).

Parking Meters—Ordinance Not Invalid as Tax on Vehicles

Ordinance establishing system of parking meters is not invalid on ground statute provides for collection of specific taxes at time of registering a motor vehicle which shall exempt vehicle from all other taxation, as meter ordinance does not impose a tax on vehicles but merely a fee for the voluntary use of a particular space for a designated period. *Bowers* v. *City of Muskegon*, 9 N. W. (2d) 889 (Mich. June 7, 1943).

Peddling—Ordinance Totally Prohibiting

Ordinance prohibiting itinerant peddling because some peddlers conduct such a business in a way which is unclean and unsanitary cannot be upheld on the ground that the city does not have sufficient enforcement officers to enforce merely regulatory measures. *Good Humor Corporation* v. *City of New York*, 49 N. E. (2d) 153 (N. Y. Ct. of App. April 15, 1943).

Schools—Superintendent of Instruction Not Removable by Board of Education

The Board of Education does not have authority to remove superintendent of instruction and the fact that the Board had adopted a rule providing for removal of officers except in cases "otherwise provided by law" is not controlling since removal of superintendent was otherwise provided by law. *State ex rel. Brohaw* v. *Board of Education of City of St. Louis*, 171 S. W. (2d) 75 (Mo. App. May 4, 1943. Reh. Den. May 21, 1943).

Sewerage Rental Charges—Lien for Is Collectible as Taxes

Where payments of sewerage rental charges which were incurred by previous owners and which by statute constituted a lien on property collectible as taxes were made by plaintiff, such charges were in the nature of an assessment and having been paid by plaintiff could not be later recovered. *Union Properties, Inc.*, v. *City of Cleveland*, 49 N. E. (2d) 571 (Ohio App. April 12, 1943).

Streets—Infant's Legs Cut Off by City Mower—Cutting Weeds Not Governmental Function

In action by plaintiff for injuries to his infant daughter whose two legs were cut off by a mowing machine operated by a city employer, city will not be excused for employee's negligence since the cutting of weeds as an incident to maintaining the streets is not a governmental function. *City of Houston* v. *Quinones*, 172 S. W. (2d) 187 (Tex. Ct. of Civ. App. May 20, 1943. Reh. Den. June 10, 1943).

Trailer Camp—Ordinance Regulating—Invalid Where Conflict with State Statute

Ordinance regulating trailer camps, limiting the use of the trailer park to an occupied trailer for a period not to exceed three months, and providing for an annual license fee of $10.00 is invalid as in conflict with the Trailer Park Act which permits unlimited parking and requires a monthly license fee of $1.50. *Richards* v. *City of Pontiac*, 9 N. W. (2d) 885 (Mich. June 7, 1943).

Vagrancy—Suspicious Persons—Ordinance Prohibiting—Validity of Where No Standard of Conduct

City ordinance providing that any person found wandering about the streets without being able to give an account of himself shall be held on charges of being a suspicious person is not unconstitutional because not providing any standard of conduct. *City of Columbus* v. *McCrory*, 49 N. E. (2d) 583 (Ohio App. Nov. 7, 1942. Just released for publication).

American Ferrofilters

PLANT VIEW

PLANT OPERATION

Removes iron, manganese, CO_2 and other dissolved gasses and odors.

Backwashing insures uniform efficiency and eliminates renewal of clogged media.

Expensive chemical treatment and sand filters eliminated.

Lowest initial and operating costs.

★

SEND FOR BULLETIN No. 252

New Bulletins Available

Grit Removal Design	No. 249	Flocsettler	No. 256
Sludge Removal	No. 253	Rotary Distributors	No. 257
Aeration Equipment	No. 254	Screens	No. 258
Mixing Equipment	No. 255	Centrifugal Pumps	No. 251
Iron and Carbon Dioxide Removal			No. 252

Buy American

THE AMERICAN WELL WORKS

AURORA ILLINOIS

MANUFACTURERS OF

Pumping - Sewage Treatment - Water Purification Equipment

One Man SPREADER

Flink-Faster-Lower Cost Ice Control & Seal-Coating

SAVED $7,000

A northern city writes: "We saved about $7,000 spreading sand alone our first season. Paid for the cost of Flink spreaders nearly 6 times over."

Another city writes, "Ice is no longer a problem. Now we get our intersections covered fast."

Let us show you these and other letters.

The truck driver operates the Flink one-man spreader. For this reason, and because it spreads faster, one truck with a Flink spreader does as much as 3 trucks with hand shovelers . . . an answer to the manpower shortage. The Flink spreader fits all standard dump bodies — does not limit use of truck. Spreads all granular materials up to 1" wet or dry, forward or backward, full width or half width of street. A Flink spreader will pay for itself in 60 days in labor saved — in extra spreading. Write for literature.

THE FLINK CO.
Streator, Illinois

For particulars write our nearest representative:

WICO SALES
2924 N. Western Ave., Chicago
WISCONSIN OIL & EQUIP CO.
34 Park Ave., Oshkosh, Wisc.
C. W. CLEMENTS
421 Townsend Ave., Columbus

Rot is Unappetizing

CUPRINOL **Stops Rot and Insect Borers**

In public parks, picnic and recreation grounds you are judged by the condition of your wood construction. Rot and decay breed dissatisfaction—and repairs are costly. But you can prevent wood rot and stop insect borers with Cuprinol, applied by brush, spray or dipping to any unpainted wood. It can be used by itself or as a priming coat, and has a 30 years successful record for preserving wood, fabrics and rope. You can't afford rot, but you can afford Cuprinol.

Send for descriptive literature

CUPRINOL, Inc., 26 Spring Lane, Boston 9, Mass.

Conventions—When and Where

Sept. 19-22—Chicago, Ill.
AMERICAN CEMETERY OWNERS' ASSOCIATION. Annual meeting. (Hotel Morrison.) Vice-Pres., Roy Hatten, 408 South Oak Park Ave., Oak Park, Ill.

Sept. 20-22—Wichita, Kans.
LEAGUE OF KANSAS MUNICIPALITIES. (Hotel Broadview.) Exec. Sec., John G. Stutz, Capitol Federal Bldg., Topeka, Kans.

Sept. 22-25—Pittsburgh, Pa.
AMERICAN WATER WORKS ASSOCIATION—WESTERN PENNSYLVANIA SECTION. Annual Meeting. (Hotel Roosevelt.) Sec. E. P. Johnson, 418 Flannery Bldg., Pittsburgh 13, Pa.

Sept. 26-28—Roanoke, Va.
LEAGUE OF VIRGINIA MUNICIPALITIES. Annual Convention. (Hotel Roanoke.) Exec. Sec., Harold I. Baumes, 902 Travelers Bldg., Richmond, Va.

Sept. 27-29—Cleveland, Ohio
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION, INC. Annual Meeting. (Hotel Statler.) Sec., Irvin Shulsinger, 8 East 41st St., New York City.

Sept. 28-29—Boston, Mass.
NEW ENGLAND WATER WORKS ASSOCIATION. Annual Meeting. (Hotel Statler.) Sec., Frank J. Gifford, 613 Statler Bldg., Boston, Mass.

Sept. 29-Oct. 1—Chicago, Ill.
NATIONAL ASSOCIATION OF ASSESSING OFFICERS. Tenth National Conference on Assessment Administration. (Hotel Morrison.) Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago, Ill.

Sept. 30-Oct. 1—Binghamton, N. Y.
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Fall War Conference. (Hotel Arlington.) Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York 20, N. Y.

***October—Birmingham, Ala. (Date Later)**
ALABAMA LEAGUE OF MUNICIPALITIES. (Hotel Tutwiler.) Exec. Sec., E. E. Reid, Exchange Hotel, Montgomery, Ala.

***Oct. 3-5—Chicago, Ill.**
INSTITUTE OF TRAFFIC ENGINEERS. Annual Meeting. (Hotel Sherman.) Sec.-Treas., W. Graham Cole, 60 John St., New York City.

Oct. 3-7—Chicago, Ill.
NATIONAL SAFETY COUNCIL. 32nd National Safety Congress & Exposition. (Hotels Sherman, LaSalle and Morrison.) Exec. Vice-Pres., Ned H. Dearborn, 20 North Wacker Drive, Chicago 6, Ill.

Oct. 5-7—Grand Forks, N. D.
NORTH DAKOTA WATER AND SEWAGE WORKS ASSOCIATION. Annual Convention. (Hotel Ryan.) Sec., K. C. Lauster, Bismarck, N. D.

***Oct. 6-7—Kalamazoo, Mich.**
MICHIGAN MUNICIPAL LEAGUE. Annual Meeting. (Hotel Columbia.) Dir., Herbert A. Olson, 205 South State St., Ann Arbor, Mich.

***Oct. 7-9—Atlanta, Ga.**
GEORGIA WATER AND SEWAGE ASSOCIATION. (Water Works Headquarters.) Sec.-Treas., Paul Weir, 1210 Hemphill Ave., NW, Atlanta, Ga.

***Oct. 11-12—Emporia, Kans.**
KANSAS ASSOCIATION OF MUNICIPAL UTILITIES. Wartime Convention. (Hotel Broadview—Civic Auditorium.) L. C. Angevine, Sec.-Treas., City Hall, McPherson, Kans.

Oct. 11-13—Oklahoma City, Okla.
AMERICAN WATER WORKS ASSOCIATION—SOUTHWEST SECTION. Wartime Conference. (Hotel Biltmore.) Sec., Geo. J. Rohan, Supt. Water Works, Municipal Bldg., Waco, Texas.

Oct. 12-14—New York, N. Y.
AMERICAN PUBLIC HEALTH ASSOCIATION. Wartime Public Health Conference and Annual Business Meeting. (Hotel Pennsylvania.) Exec. Sec., Dr. Reginald W. Atwater, 1790 Broadway, New York.

Oct. 12-14—St. Louis, Mo.
CIVIL SERVICE ASSEMBLY OF THE UNITED STATES AND CANADA. Annual Conference on Public Personnel Administration. (Hotel Statler.) Dir., James M. Mitchell, 1313 E. 60th St., Chicago, Ill.

Oct. 13—New York, N. Y.
ILLUMINATING ENGINEERING SOCIETY. Annual Meeting. (Hotel New Yorker.) Exec. Sec., Frank G. Horton, 51 Madison Ave., New York.

Oct. 13-14—Peoria, Ill.
ILLINOIS MUNICIPAL LEAGUE. Annual Convention. (Hotel Pere Marquette.) Exec. Dir., A. D. McLarty, 537 So. 4th St., Springfield, Ill.

Oct. 14-16—Philadelphia, Pa.
AMERICAN WATER WORKS ASSOCIATION—FOUR STATES SECTION. Joint Meeting with the Pennsylvania Water Works Operators' Assn. (Hotel Benjamin Franklin.) Sec., Lloyd Nelson, 1624 Lincoln-Liberty Bldg., Philadelphia, Pa.

Oct. 14-16—Philadelphia, Pa.
AMERICAN WATER WORKS ASSOCIATION—NEW JERSEY SECTION. Fall Meeting with Four States Section. (Hotel Benjamin Franklin.) Sec., C. B. Tygert, P. O. Box 178, Newark, N. J.

Oct. 15-16—Des Moines, Iowa
AMERICAN WATER WORKS ASSOCIATION—MISSOURI VALLEY SECTION. (Hotel Fort Des Moines.) Sec., Earle L. Waterman, Room 104, Engineering Hall, University of Iowa, Iowa City, Iowa.

Oct. 17—York, Nebr.
LEAGUE OF NEBRASKA MUNICIPALITIES. War Conference of City Officials. (Hotel McCloud.) Sec-Treas., C. E. Beals, 310 Continental Bank Bldg., Lincoln, Nebr.

Oct. 19-20—Milwuakee, Wis.
AMERICAN WATER WORKS ASSOCIATION—WISCONSIN SECTION. Wartime Water-works Conference. (Hotel Plankinton.) Sec., Leon A. Smith, City Hall, Madison, Wis.

Oct. 19-21—Sacramento, Calif.
LEAGUE OF CALIFORNIA CITIES. Annual Conference. (Hotel Senator.) Sec.-Treas., Chas. Schwanenberg, City Manager, Oakland, Calif.

***Oct. 20-21—Augusta, Maine**
MAINE MUNICIPAL ASSOCIATION. Annual Convention. (Augusta City Hall.) Acting Sec., Ernest Johnson, 97 Water St., Hallowell, Maine.

***Oct. 20-22—San Antonio, Texas**
LEAGUE OF TEXAS MUNICIPALITIES. Annual Convention. (Hotel Gunter.) Exec. Dir., E. E. McAdams, 2220 Guadalupe St., Austin, Texas.

Oct. 21—Springfield, Ill.
ILLINOIS ASSOCIATION OF PARK DISTRICTS. Sixteenth Annual Convention. Exec. Dir., A. D. McLarty, 537 E. 4th St., Springfield, Ill.

Oct. 21-23—Chicago, Ill.
CENTRAL STATES SEWAGE WORKS ASSOCIATION. Joint Meeting with the Wartime Sanitation Conference of the Federation of Sewage Works Associations. (Hotel Sherman.) Sec.-Treas., J. C. Mackin, Route 4, Madison, Wis.

Oct. 21-23—Chicago, Ill.
FEDERATION OF SEWAGE WORKS ASSOCIATIONS. Wartime Sanitation Conference; Joint Meeting with the Central States Sewage Works Assn. (Hotel Sherman.) Sec., W. H. Wisely, Box 18, Urbana, Ill.

Oct. 24-27—Chicago, Ill.
AMERICAN PUBLIC WORKS ASSOCIATION. Public Works Congress. (Hotel Sherman.) Exec. Dir., Frederic Bass, 1313 E. 60th St., Chicago, Ill.

Oct. 24-27—Pittsburgh, Pa.
NATIONAL ASSOCIATION OF COMMERCIAL ORGANIZATION SECRETARIES. War Conference. (Hotel William Penn.) Asst. Sec.-Treas., Mrs. Norma McKellops, 1615 H Street, NW, Washington, D. C.

Oct. 25-26—Jefferson City, Mo.
MISSOURI WATER AND SEWERAGE CONFERENCE. (Hotel Governor.) Sec.-Treas., W. A. Kramer, State Board of Health, Jefferson City, Mo.

Oct. 27-29—Chicago, Ill.
THE AMERICAN MUNICIPAL ASSOCIATION. Annual Conference. (Hotel Blackstone.) Exec. Dir., Earl D. Mallory, 1313 E. 60th St., Chicago, Ill

Oct. 27-29—Los Angeles, Calif.
AMERICAN WATER WORKS ASSOCIATION—CALIFORNIA SECTION. Wartime Conference. (Hotel Biltmore.) Sec., H. Arthur Price, Box 3669 Terminal Annex, Los Angeles, Calif.

Oct. 28-29—Niagara Falls, Ont., Canada
The Canadian Institute on Sewage and Sanitation. Annual Convention. (Hotel General Brock.) Sec.-Treas., Dr. A. E. Berry, c/o Dept. of Health, Parliament Bldg., Toronto.

***Nov. 1-2—Pittsburgh, Pa.**
ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA. Annual Water Conference. (Hotel William Penn.) General Chairman, H. M. Olson. (Hotel William Penn.) Pittsburgh.

***Nov. 4-5—Clarksburg, W. Va.**
AMERICAN WATER WORKS ASSOCIATION—WEST VIRGINIA SECTION. Joint Meeting, West Virginia Section and Eighteenth Conference on Water Purification. (Hotel Stonewall Jackson.) Sec., John B. Harrington, c/o State Dept. of Health, Charleston, W. Va.

***Nov. 10-17—Little Rock, Ark.**
ARKANSAS MUNICIPAL LEAGUE. Annual Convention. (Robinson Memorial Auditorium.) Acting Exec. Dir., Glenn G. Zimmerman, City Bank Bldg., North Little Rock, Ark.

Nov. 18-19—New York, N. Y.
NEW JERSEY STATE LEAGUE OF MUNICIPALITIES. Annual Conference. (Hotel New Yorker.) Exec. Sec., James J. Smith, 808 Trenton Trust Bldg., Trenton, N. J.

Nov. 20-22—Chicago, Ill.
NATIONAL TAX ASSOCIATION. (Palmer House.) Sec., Raymond E. Manning, Library of Congress, Washington, D. C.

***Nov. 22-25—Roanoke, Va.**
AMERICAN WATER WORKS ASSOCIATION—VIRGINIA SECTION. Fall Conference. (Hotel Roanoke.) Sec., F. H. Miller, Asst. Engineer, Bureau of Sanitary Engineering, State Department of Health, Richmond, Va.

***Nov. 29-30—Chicago, Ill.**
HIGHWAY RESEARCH BOARD OF THE NATIONAL RESEARCH COUNCIL. Annual Meeting. (Hotel Edgewater Beach.) Dir., Roy W. Crum, 2101 Constitution Ave., Washington, D. C.

Nov. 30-Dec. 3—New York, N. Y.
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Annual Meeting. (Hotel Pennsylvania.) Exec. Asst. Sec., Ernest Hartford, 29 W. 39th St., New York, N. Y.

* First appearance of notice on this page.

Municipal Reserve Funds

At its recent annual meeting, the New York State Conference of Mayors passed the following resolution:

RESOLVED, That we urge the municipalities of New York State to direct their immediate efforts to municipal planning for the post-war period, that local debts be paid as rapidly as possible, that sound financial policies be adopted, that plans and specifications be made for future public construction where needed and that capital, repair and tax stabilization reserves be created for post-war construction, repair, replacements and other necessary purposes to enable municipalities to meet their obligations during the period of conversion of war industries to peacetime production.

You can get

CHAPMAN SLUICE GATES

in many types and sizes . . . . . with any type of operating control

CHAPMAN MOTOR UNITS relieve wartime labor problems . . . because it takes only one finger to operate the most widespread network of equipment. Can be installed in any position, outdoors or completely submerged.

The standard line of Chapman Sluice Gates covers such a wide range of types and sizes that average needs can be readily met without the cost and delay of specially built equipment. That's your first saving, when you check with Chapman. Your second saving comes with installation, where interchangeability of parts speeds the work because stems and couplings don't have to be match-marked. As for operating control, you can get any type desired . . . manual, hydraulic cylinder, or by Chapman Motor Unit. For complete information, dimensions, and specifications, send today for a copy of the Chapman Sluice Gate Handbook.

ARMY E NAVY

THE CHAPMAN VALVE MFG. CO.

INDIAN ORCHARD, MASS.

Municipal and Civic Publications

Post-War Planning Bills and References

Two publications of the National Housing Agency, Washington, D. C. 1943.

Analyses of Pending Federal Bills Relating to Post-War Economic Policy and Planning and Post-War Urban Redevelopment. 17 *pp., mimeo.*

Abstracts and explanations of several Federal bills dealing with post-war economic planning and post-war urban redevelopment, which are up for consideration.

Abstracts of Selected Material on Post-War Housing and Urban Redevelopment.—Unpaged, mimeo.

Abstracts from 27 pamphlet, book, and legislative references on the subject of post-war housing and urban redevelopment, arranged under the following headings: post-war plans—United States and foreign; foreign housing legislation; post-war plans for cities; social and economic changes; and legislation.

The Future City

The City of Tomorrow.—By Eugene Van Cleef, Professor of Geography, Ohio State University. Reprinted from the Ohio Journal of Science, Vol. XLII, No. 4, July 1942. 7 *pp.*

The Presidential address at the fifty-second annual meeting of the Ohio Academy of Science, in which Prof. Van Cleef gives a scientific analysis of cities with respect to structure, form, function, and origins, discusses planning, and makes some general predictions as to the direction in which cities will move in the future.

Budget Survey

Public Opinion on the City's Budget Planning.—Civic Research Institute, Kansas City, Mo. 1943. 32 *pp., offset.*

Report of a public opinion survey in Kansas City, pertaining to general budget policy in regard to such items as city employees' pay and cost of living, public works department, park department, welfare department, the city hospitals, and the public library, as well as planning for post-war needs.

Pump Testing Standards

Standards of Hydraulic Institute—Section F, Test Code Section.—Hydraulic Institute, 90 West Street, New York 6, N. Y. Revised Edition. 1943. 31 *pp.* 50c.

Hydraulic Institute, the national trade association of pump manufacturers, has completely revised the Test Code Section of its Standards. This section contains specific recommendations for the testing of centrifugal and rotary pumps, both for acceptance tests in the field, and in the plant of the pump manufacturer. The Code contains the limiting conditions for all methods of quantitative determination of capacity, head, and power input, whereby the accuracy for an acceptance test can be obtained.

Public Employee Retirement Plans

Addresses delivered at Pittsburgh, Pa., June 16, 1943, at the Conference of the Committee on Public Employees Retirement Administration of the Municipal Finance Officers Association, 1313 E. 60th St., Chicago. Mimeo.

A series of speeches made by men who are active, in one way or another, in the administration of retirement plans in various cities and states, covering various aspects of the subject of public employee retirement plans—for example, their relation to the Social Security Act, and the wartime problems involved in their administration.

Plan for Regional Freeways

Freeways for the Region.—Regional Planning Commission, County of Los Angeles, Los Angeles, Calif. 1943. 50 *pp.*

An attractive report which presents graphically the need for a regional system of freeways and submits a freeway plan for consideration by citizens of the Los Angeles region.

Air Raid Protection Bibliographies

Civilian Defense—Three Selected and Annotated Bibliographies on the Organization and Administration of Air Raid Protection.—Legislative Reference Service, The Library of Congress, Washington, D. C. April 1941-*March* 1942, 38 *pp. April-December* 1942, 76 *pp. January-May* 1943, 36 *pp.*

Mimeographed bibliographies which are part of periodical cumulations of a weekly annotated index of material relating to the war in its various aspects. These annotated and selected lists of references cover the period from April 1941 to May 1943, and are a guide to recent pamphlets, books, and articles on air raid precautions, the organization problems involved, sabotage prevention, protection of special objects, and war damage compensation.

Canadian Views on Housing

Homes or Hovels?—"Behind the Headlines," Edited by Anthony Adamson. Published jointly by the Canadian Institute of International Affairs, 230 Bloor St. West, Toronto, and Canadian Association for Adult Education, 198 College St., Toronto. 1943. 48 *pp.* 10c.

A pamphlet which presents some authoritative Canadian views on the problems of house-building and, to a lesser extent, community planning, and contains speeches delivered at a conference arranged and conducted in February 1943 by the Ontario Association of Architects.

TVA Power Program

The Tennessee Valley Authority.—By Joseph Sirera Ransmeier. The Vanderbilt University Press, Nashville, Tenn. 1942. *xx* + 486 *pp.* $3.00.

The purpose of this book is to contribute toward the clarification of joint cost allocation—one of the more controversial issues of the Tennessee Valley Authority power program. In Part I the existency of multiple purposes at TVA among which joint costs may be divided is established. In Parts II and III the author examines theories for dividing joint costs among purposes, and critically appraises the case for breaking down joint costs. Some concluding observations are made as to the implications for public water policy of the maturity of the multiple purpose concept.

Community Surveys

Outline for a "Master" Community Survey.—Construction and Civic Development Department, Chamber of Commerce of the United States, Washington, D. C. 1943. 53 *pp., mimeo.*

A detailed, instructive outline of the procedure of conducting a satisfactory community survey which will gain the facts necessary to provide a basis for constructive campaigns.

Diagnosis of Shock

The Clinical Recognition and Treatment of Shock.—Medical Division, U. S. Office of Civilian Defense, Washington, D. C. 1943. 35 *pp.*

This information, issued for distribution to civilian doctors, members of the Emergency Medical Service, and civilian hospitals, is intended as an aid in the prompt recognition of the need for plasma and the prompt administering of plasma in adequate amounts. Also contains sections on crush syndrome and blast syndrome.

Civil Liberties Protection

Safeguarding Our Civil Liberties.—By Robert E. Cushman. Public Affairs Committee, Inc., 30 Rockefeller Plaza, New York City. 1943. 31 *pp.* 10c.

A popular, factual pamphlet in which the author points out the dangers to civil liberty, gives the background and history of the Bill of Rights, and discusses how civil liberty can and must be protected in our Federal system.

Police and Fire Department Studies

Two publications of the Civic Research Institute, 711 Waltower Building, Kansas City, Mo. 1943.

A Study of the Kansas City Police Department.—By J. M. Leonard, Detroit Bureau of Governmental Research, Detroit, Mich. 123 *pp., offset.* $1.00.

A study of the organization and operational methods of the Kansas City Police Department, which finds and recommends a number of changes which would improve departmental efficiency.

A Study of the Kansas City Fire Department.—By Robert E. Pickup, Providence Governmental Research Bureau, Providence, R. I. 1943. 40 *pp., offset.*

A report on the Kansas City Fire Department, which makes suggestions in regard to organization, records, fire fighting force, running card, personnel, station and apparatus, and fire prevention.

City Employees' Pension Law

The Wisconsin Municipal Retirement Fund.—League of Wisconsin Municipalities, 30 East Johnson Street, Madison, Wis. 1943. 29 *pp., mimeo.*

An explanation of the new statewide pension system for municipal employees, which is optional for any city or village. Gives the background and a summary of the Wisconsin Municipal Retirement Fund, procedure and forms for adopting it, questions and answers in regard to the law, and a copy of the Act itself.

Post-War Works Progress

Post-War Works Program—the City of New York.—City Planning Commission, Municipal Building, New York City. 1943. *viii* + 37 *pp. mimeo.*

A report on the progress of plans and specifications for the post-war works program of New York City as of June 30, 1943, which is a summary of the more comprehensive progress schedules which are maintained by the City Planning Commisison periodically. Also included is a prospectus of the Post-War Works Exhibit to be developed in the old Board of Education Building.

Post-War Security Plans

Official Statements on Post-War Social Security.—Bulletin of the Commission to Study the Organization of Peace, 8 W. 40th St., New York 18, N. Y., May-June, 1943. 24 *pp.* 20c.

A convenient, outlined summary of the Beveridge Report on Social Insurance and Allied Services and of the National Resources Planning Board Report for 1943, with a comparison of the two plans.

Defense Agencies in States

State Councils of Defense.—Bureau of Public Administration, University of California, Berkeley, Calif. 1942. 57 *pp., mimeo.*

A tabulation, with explanatory text, of the organizational histories of the state defense agencies existing as of November 15, 1942, as well as of the composition, administrative structure, committees, and funds of these defense councils, and their relationships with other agencies.

County Planning

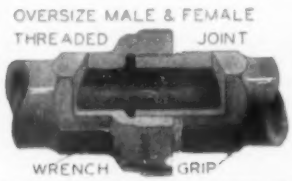
Handbook for Parish Planning.—By Roy H. Odom, Chief, Technical Reports Section, State of Louisiana Department of Public Works, Baton Rouge, La. 1943. 121 *pp.*

This handbook points the way in which local citizens may organize, study their planning needs, and work out their own solutions, obtaining such assistance as they may require from their local, state, and Federal agencies. Outlines the various problems of a county (parish) in wartime, gives the steps in plan making, provides guides for survey committees, and deals with the various development problems of Louisiana.

the 100 YEAR PIPE for SMALL Water MAINS

This oversize THREADED joint—with hex grips that hold the wrench firmly—make it easy for untrained men to lay McWane 2" cast iron pipe.

For all they do is "screw 'em together" in long 108 ft. sections—join two sections with a Glantite Expansion Joint—and snake the line into the trench. It takes only MINUTES to lay 100-YEAR mains!



IMMEDIATE SHIPMENTS

McWANE CAST IRON PIPE CO.
BIRMINGHAM, ALA.

McWANE 2" CAST IRON PIPE

SAVE 50% ON FUEL — HEAT AND MELT TAR AND ASPHALT TWICE AS FAST WITH THE AEROIL "HEET-MASTER" KETTLE

The "HEET-MASTER" will produce as much "hot stuff" as two ordinary type oil-burning kettles of the same capacity. Used by leading road and airport contractors. Send for FREE Bulletin No. 194AC. For Cut-Back and Emulsion Sprayers, Bulletin No. 190A. Oil-burning Lead and Pipe Compound Melting Furnaces, Bulletin No. 232AC. Portable Oil Burner & Torch Outfits, Bulletin 174A. Asphalt Paving Tools & Accessories, Bulletin 312A. Asphalt Paving Tool Heaters and Asphalt Pavement Heaters, Leaflet 171A.

Aeroil Burner Co., Inc., West New York, N. J.
CHICAGO SAN FRANCISCO DALLAS

CENTRIFUGAL PUMPS FIRE HYDRANTS A.W.W.A. GATE VALVES

Manistee single-stage, double-suction pumps, 75-20,000 g.p.m. capacity

Manistee multi-stage pumps, 50-3500 g.p.m. capacity with heads up to 1600 feet

Write for Bulletins

MANISTEE IRON WORKS CO.
MANISTEE MICHIGAN

Throw Away YOUR FLOATS

B/W *All-Electric* Floatless Controls make possible closer and more accurate control of liquid levels in wells, tanks, and reservoirs, and do a better job for you. Why be without these modern controls?

Send for free literature today!

B/W CONTROLLER CORP.
2200 EAST MAPLE ROAD
BIRMINGHAM, MICHIGAN

FOR SALE:

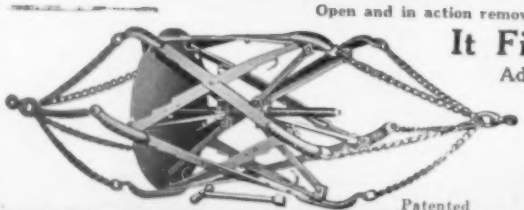
Two Rex #200 double Pumpcretes with Waukesha 6 cylinder gasoline engines. Complete with pugmill remixers, 1200' 8" pipe. Excellent condition.

12 Wagon drills—type FM 2, Serial X71, Wd Drifter, pneumatic tires.

Great Lakes Dredge & Dock Company
W. J. Keefe, Pur. Dept.
122 S. Michigan Ave. Chicago, Ill.

EXPANDING ROOT CUTTER & SEWER CLEANER

Open and in action removing roots and caked sediment like this.



Patented

It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY
108 East Walnut St. Nappanee, Ind.

Wartime Care of Children

Community Action for Children in Wartime.—U. S. Department of Labor, Children's Bureau, Washington, D. C. 1943. 9 *pp.*

Leaflet suggesting the kind of help urgently needed for the children and youth of most communities right now. Lists and discusses six projects (baby clinics, school lunches, play and recreations programs, schooling, employment safeguards, and care for children of employed mothers) reaching needs which are most common throughout the country.

Community Programs of Child Care, Development and Protection.—Prepared by Committee on Child Care, Development and Protection of the New York State Council of Defense, Division of Volunteer Participation. Issued jointly by the New York State Council of Defense and the State Departments of Education, Health, Labor, Mental Hygiene, and Social Welfare, Albany, N. Y. 1942. 16 *pp.*

A pamphlet which gives suggestions to communities on the setting up and functioning of local committees on child care, development, and protection, surveying local conditions, and expanding existing local services and establishing supplemental services to meet this problem.

Colorado Planning and Zoning

Planning and Zoning—Colorado Cities and Towns.—By H. A. Storey, Colorado Municipal League, University of Colorado, Boulder, Col. 1943. 45 *pp.* $1.00.

A study which outlines the power and procedure of Colorado cities and towns in planning and zoning and presents a skeleton zoning ordinance. Discusses various decisions of the Colorado Supreme Court in reference to zoning, and describes the actual experiences of eight Colorado cities with zoning.

British Post-War Planning Agencies

Post-War Planning in Britain.—British Information Services, 30 Rockefeller Plaza, New York City. 1943. 80 *pp.*

This pamphlet, which covers the war period in Britain from September 1939 to the end of January 1943, contains accounts of the work of the many unofficial organizations concerned with post-war planning, arranged under the headings off: international planning; relief and rehabilitation; industry and economics; the land; town planning; housing and amenities; agriculture; education; medicine and health; science; the churches.

Direct Legislation

The Initiative and Referendum in California.—By Winston W. Crouch. The Haynes Foundation, Los Angeles, Calif. Revised Edition. 1943. 29 *pp.*

A discussion of the various types of direct legislation, of the development of California's direct legislation, and of the workings of the initiative and referendum in that state. Presents, also, different opinions that have been voiced on the subject of direct legislation.

City Proposals Voted Upon and Number of Registered Voters.—Bureau of the Census, Department of Commerce, Washington, D. C. 1943. 29 *pp.*, *offset.*

A bulletin which gives, with the aid of numerous tables, a thorough report on direct legislation—the nature and fate of the charter amendments and municipal ordinances submitted—during 1942 in the American cities having populations over 25,000.

Keeping of Records

Records Program—Records Administration and Archival Service for the Tennessee Valley Authority.—Prepared by Office Procedures and Standards Staff, Office Service Department, Tennessee Valley Authority, Knoxville, Tenn. 1943. 54 *pp., mimeo.*

Outline of a comprehensive records program which is gradually being put into practice by the Tennessee Valley Authority and which will place the files on an efficient operating basis and will prevent a recurrence of many of the problems previously encountered.

Economic Problems of the South

Planning for the South.—By John V. Van Sickle. Vanderbilt University Press, Nashville, Tenn. 1943. 255 *pp.* $2.75.

A book which analyzes the planning measures which would help to remedy some of the economic problems of the South, surveys the South's natural and human resources, proposes a goal for the Region, examines control measures over which the Southern people have substantial control, and analyzes a number of measures falling within the competence of the Federal Government. Finally, a case for differential Federal aid to the South is submitted, together with a formula that would preserve the vitality of local institutions, and suggestions for changes in the Federal and state fiscal systems which would promote the successful execution of the entire program.

Planning for Transition to Peace

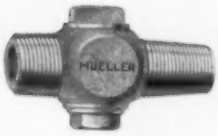
Demobilization and Readjustment.—National Resources Planning Board, Washington, D. C. 1943. 106 *pp.*

Report of the informal Conference on Post-War Readjustment of Civilian and Military Personnel, set up by the National Resources Planning Board at the request of the President. Sets down the objectives of demobilization and readjustment; and discusses aids in this process in regard to members of the armed forces, war workers, and women; and deals with the questions of employment opportunities, cost, and organization.

New York State Housing Data

Supplement to the Report of the State Commissioner of Housing to the Governor and Legislature of the State of New York.—Division of Housing, Executive Department, New York City. 1943. 13 *pp.*

Summary tables of data on construction, operation, and maintenance of housing company projects, issued as a supplement to the December 31, 1942 Report of the State Commissioner of Housing.



H-10003
Corporation Stop

H-10203
Curb Stop

The fact that these stops bear the name MUELLER is ample assurance that you will get the best in brass goods when you buy them. MUELLER pioneered many of the improvements in the water works field, and our 86 years of experience have given us a "know-how" that brings to you long on-the-job performance by every MUELLER product you use. This means reduced installation and upkeep costs. If you need more information consult our Catalog H. Write us if you do not have one.

MUELLER CO. DECATUR ILL.

Once . . . . an economy and a convenience

Now . . . . a wartime necessity

Ross Automatic Valves

Surge Relief Valves—

Protect **distribution systems against excessive pressures.**

Prevent **over-drafting of a deep well by supplying constant back-pressure.**

Altitude Valves—
Single or double-acting

Prevent **overflow of tanks, standpipe or reservoirs.**

Retain **supply on off-peak loads. Make storage available for peak load periods.**

Control **head during filtering operations.**

Reducing Valves—

Regulate **pressures in either gravity or direct pressure systems.**

Regulate **fire-flows between zones of unequal pressure.**

Regulate **pressure in filter waste lines.**

No distribution system is better than the valves that control it.

Write for literature, catalogs, and details to fit your particular system.

ROSS VALVE MFG. CO., Inc.

P. O. BOX 596 TROY, N. Y.

HIGH EARLY STRENGTH

WITH CALCIUM CHLORIDE FOR ALL CONCRETING

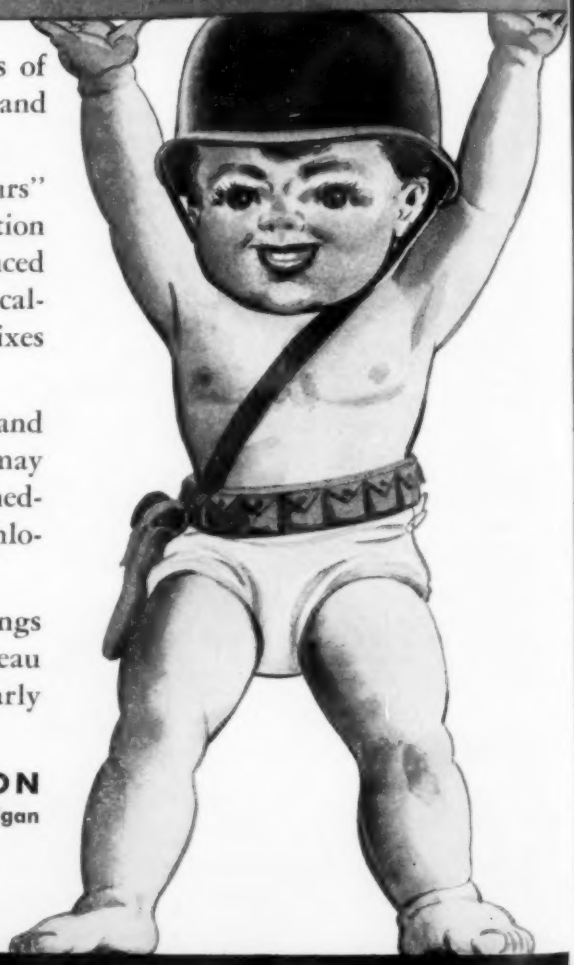
MANY factories have reduced man hours of labor required to produce planes, ships and guns — sometimes 50% or more.

In war-urgent concreting it's "waiting hours" instead of "man hours" that hold up completion of concrete work. These waiting hours are reduced one-half to three-fourths by incorporation of calcium chloride in portland cement concrete mixes to produce higher early strengths.

Forms may be removed in half the time and succeeding courses placed earlier. Finishing may follow placing promptly to maintain work schedules — and the concrete containing calcium chloride has greater strength at all ages.

These advantages are confirmed in the findings of many years of tests at The National Bureau of Standards. Write us for Bulletin 28 — "Early Strength Concrete."

CALCIUM CHLORIDE ASSOCIATION
4145 Penobscot Building **Detroit 26, Michigan**



CALCIUM CHLORIDE

SPEEDS YEAR-ROUND CONCRETE CONSTRUCTION

Determining Taxation Needs

Taxing to Prevent Inflation.—By Carl Shoup, Associate Professor of Economics, Columbia University; Milton Friedman, Division of Tax Research, U. S. Treasury; and Ruth P. Mack, National Bureau of Economic Research. Columbia University Press, New York City. 1943. xii + 256 pp. $2.75.

In the opinion of the authors of this study, the amount of taxation needed should be recognized as a quantitative one, and in this book they present techniques for making the calculations essential for an estimate which will be substantially correct.

Section which discusses the different types of taxation available and compares the respective advantages of sales and income taxes will be of particular interest to the taxpayer who would like a clear picture of the issues involved when Congress debates the huge wartime bills.

State Activities

The Book of the States—1943-1944.—The Council of State Governments, 1313 E. 60th Street, Chicago, Ill. 1943. xii + 508 pp. $4.00.

Fifth edition of this book, which provides an authoritative source of information on state activities and reports the work during the past biennium of the Council of State Governments, the commissions on interstate cooperation, and other agencies affiliated with the Council.

This edition reflects the effect of the war on state governments, and presents current information on state organization and activities of continuing interest—general information about the states, state legislatures and legislation, the executive and judicial branches of government, and regulatory activities of the states.

Civilian War Training

Report of Civilian War Training in New York State.—Prepared by Albert H. Hall, Director, Office of War Training, New York State War Council, Albany, N. Y. 1943. v + 13 pp., mimeo.

A report which gives the objectives of the Office of War Training of the New York State War Council, and gives a detailed report of its various training programs for civilian protection, during the period June 1941 to May 15, 1943.

Voting

For This We Fight—A Story About Democracy for Children of All Ages.—Civic Research Institute, Kansas City, Mo. 1943. Unpaged, lithographed.

The story of the poor turn-out for voting in the November 1942 election, based on statistical material obtained from two public opinion polls conducted in Kansas City by the Institute at that time, and graphically presented by means of simple language and vivid sketches.

Guide for State Police

Maine State Police—Reports and Forms and the Relationship of Investigation to Report Writing.—By Henry P. Weaver, Chief, Maine State Police, Augusta, Maine. 1942. vii + 65 pp.

Instructions, and samples of forms and case reports issued for the guidance of Maine State Police Officers in the new training program. Purpose is to aid these men in filing information and evidence disclosed during an investigation, and to help establish a state-wide uniform system of reporting investigations to their superiors.

Other Reports Received

The Care of Children Under Five in Wartime (England and Wales).—British Information Services, 30 Rockefeller Plaza, New York City. 1943. 16 pp.

Motion Pictures and the War.—Address by Albert H. Hall, Director, Office of War Training, New York State War Council. 1943. 8 pp., mimeo.

AUSTIN, TEXAS.—"Planned or Unplanned Growth." By G. S. Moore, City Planning Engineer, for City Plan Commission, Austin, Texas. 1943. 25 pp., mimeo.

CONNECTICUT.—Three publications of the Traffic Safety and Research Section, State Department of Motor Vehicles, Hartford, Conn.:

—"Selective Traffic Enforcement on State Highways and in Rural Areas of Connecticut."—1943. Unpaged, mimeo.

—"Who, Where, Why and How"—Development of Reports to Guide Connecticut Promotion of Safety on Street and Highway.—1943. 13 pp., mimeo.

—"Connecticut Traffic Accident Facts—First Six Months of 1943 Compared with Same Period Last Year."—Unpaged, mimeo.

MILWAUKEE, WIS.—"Milwaukee's Progress, 1942." Annual Report of Common Council. Municipal Reference Library, Milwaukee, Wis. 119 pp.

—"Our Roots Grow Deep." Annual Report, Superintendent of Public Schools. 1943. 144 pp.

MICHIGAN.—Biennial Report, 1941-1942, Stream Control Commission. 50 pp.

RHODE ISLAND.—Manufacturing Mileage Through Employee Transportation Conservation in Rhode Island War Industries. Rhode Island Council of War Agencies. 1943. Unpaged.

TOPEKA, KANS.—Annual Report, 1942. 16 pp., offset.

WASHINGTON.—Two publications published by the Association of Washington Cities in Cooperation with the Bureau of Governmental Research, University of Washington, Seattle, Wash.:

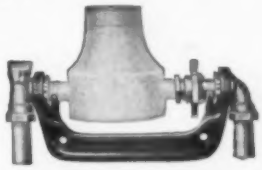
—"1943 Laws Affecting Cities." 1943. 58 pp., offset.

—"1944 Budget Suggestions." 1943. 66 pp., mimeo.

WAYNE COUNTY, PA.—Survey, 1939-1943. Summary of Receipts and Expenditures for each Taxing Subdivision. Ohio Public Expenditure Council, Columbus, Ohio. 1943. 112 pp., offset.

FORD YOKES

Before the FORD YOKE there was no yoke for water meters. In pioneering this development it was Edwin H. Ford's firm conviction that every meter deserved more consideration than to be installed in a service like any fitting or piece of pipe.



Now, with the trend more strongly than ever toward greater accuracy and more frequent testing, the easy and trouble-free accessibility of a water meter set in a Ford Yoke makes this proven and perfected setting device even more worth while.

It will pay any water works to investigate and consider carefully the many advantages Ford Yokes have to offer.

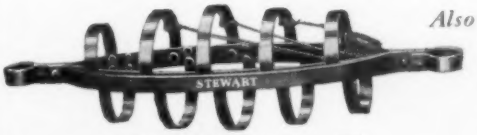
FORD METER BOX CO.
WABASH, IND.

Save TIME—Save MANPOWER—
USE
STEWART
Sewer Cleaning Equipment

Regular Bucket Sizes 4" to 36"

Root Cutters, Sectional Steel Rods, End Tools, Propelling Nozzles.

No. 11 Screw



Root Cutter Sizes 4" to 22"

Also a complete line of—

- Steel Tapes
- Round Steel Rods
- Self-propelling Nozzles
- Flushers
- Wire Brushes

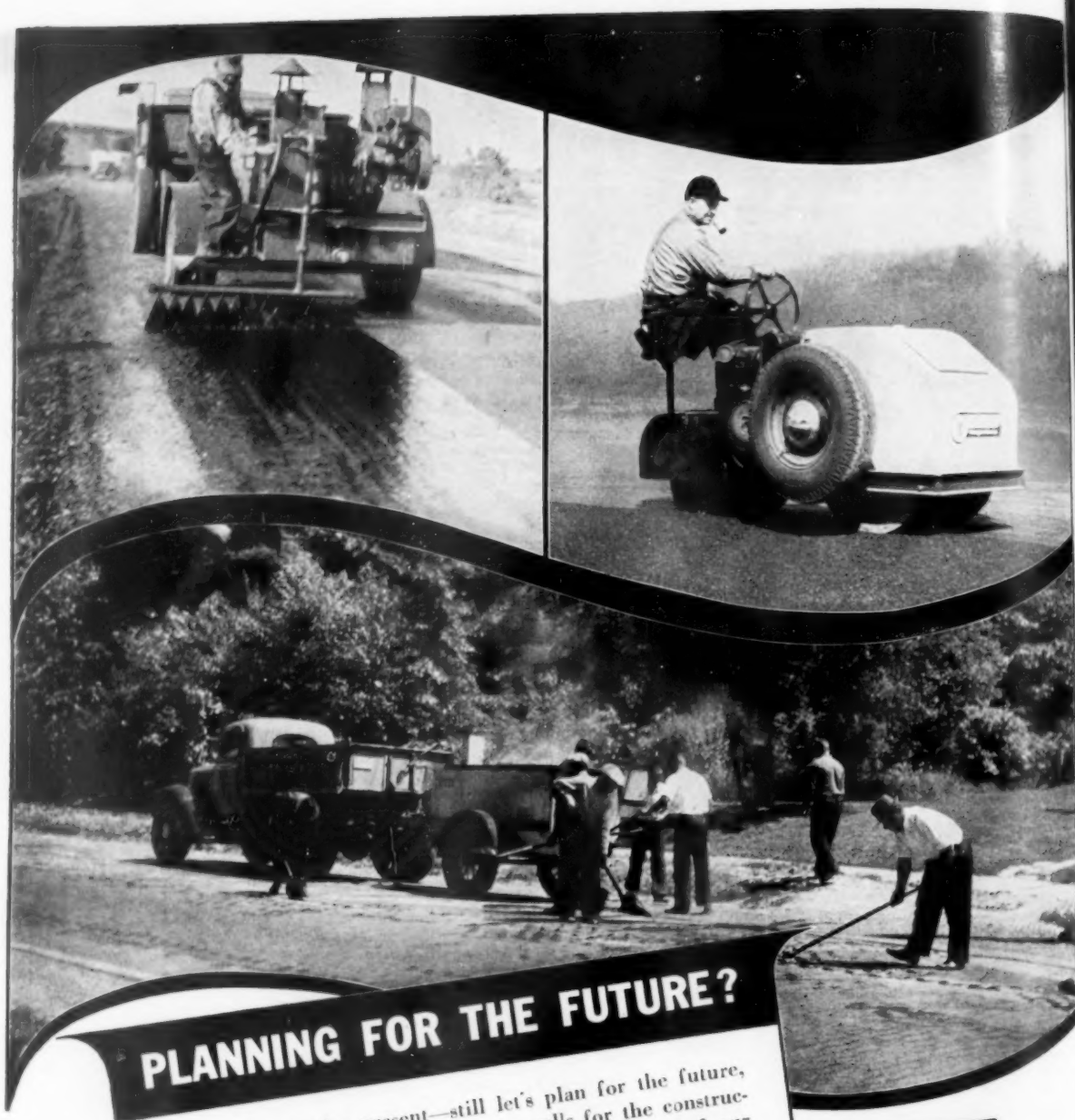
Also

- Windlasses, hand or power driven, may be purchased separately

No. 1 Sewer and Conduit Rod

Regardless of your sewer-cleaning problem, write us today, without obligation. Complete catalog sent promptly on request.

W. H. STEWART, 1051 S. CLINTON ST., SYRACUSE, NEW YORK



PLANNING FOR THE FUTURE?

Let's not forget the present—still let's plan for the future, too! Our vital transportation system calls for the construction of new highways, roads, streets, and the repair of our present system, so be prepared—plan to purchase your Littleford Black Top Construction and Maintenance Equipment after Victory. Pave the Road to Victory first, pave the roads later.

Upper Left: Littleford No. 101 Utility Spray Tank. Bottom: 84-HD Kettle.
Upper Right: Trail-O-Roller.

BLACK TOP ROAD MAINTENANCE EQUIPMENT
LB
SINCE · 1900

LITTLEFORD

LITTLEFORD BROS., INC.
500 E. Pearl St., Cincinnati, Ohio

News and Illustrations

Items of Interest to City, Town and County Officials and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

Pumps Go to the Battlefront

How a Peacetime Servant Developed into a Versatile Hard-Fighting Warrior

(U. S. NAVY PHOTO)

The deck of the Battleship California breaks water as she rises to the surface at Pearl Harbor where she was sunk by the Japs on December 7, 1941. In foreground is one of many Peerless Pumps used in dewatering and raising the vessel and her sister ships at Pearl Harbor.

Without water an army can face defeat. Rommel in his disastrous debacle in Africa learned this lesson, but Uncle Sam's forces anticipated the need for dependable sources of water and planned a new strategy for hastily developing a water supply on the various battlefronts.

Since World War I new pumping principles have been developed. Instead of relying upon the outmoded horizontal centrifugal type, the expeditionary forces are using water-producing strategy—that of deep well pumps which can tap deeper water veins.

"Stockpile" Pump

One successful type of pump used in this service is the Hi-Lift, manufactured by the Peerless Pump Division of Food Machinery Corp., 301 W. Ave. 26, Los Angeles 31. The Hi-Lift is what might be called a "stockpile" pump, because one size can be used in any depth of well to pump anything from a 30-foot to a 400-foot head of water. Thus only one size is needed for most installations. Invading unknown country, army engineers aren't always aware of water conditions so the pump must be adaptable to any lift and must be easily portable.

The Hi-Lift pump used for this service is usually powered with a light portable gasoline engine which drives it through a right-angle geared head. Engineers, sent out in advance, survey water conditions and hastily sink a well with portable drilling equipment. Such wells are usually of 4-inch inside diameter to accommodate a 40-series pumping element which is installed in the well below the water level. The Hi-Lift pumping element has a unique helical rotor operating within a resilient rubber stator bearing, also helical in design. The hypocycloidal action of the rotor within the rubber sleeve literally "squeezes" the water uphill.

Even in areas where surface water abounds, army engineers seem to prefer the ground water supply. Being nature-filtered, it helps prevent dysentery and other ailments akin to military operations.

Dry Dock and Salvage Work

Another interesting use of pumps in the war is their application to dry-dock service. In this work, requiring evacuation of water in tremendous quantities, the deep well turbine type has been adopted, even though the head may be only 30 to 40 feet.

Another recent development has been the submersible pump which can be attached to the end of a hose and dropped down within a ship's hold for dewatering. It also has been adopted for use in dewatering water-logged land.

Perhaps the most spectacular water job of the war cannot be revealed. Our battleships at Pearl Harbor have been raised and are now being repaired and recommissioned. Hardly had the smoke of battle been cleared, when the order went out from Washington, "raise the sunken ships." To Peerless Pump engineers was assigned the duty of producing dewatering pumps to clear the water from ships that had been sealed under water or to dewater cofferdams built around them.

One outstanding order for 30 Peerless Pumps was produced for this emergency in the amazingly short time of only 36 hours, the manufacturer states. Ships at a west coast harbor awaited their delivery. The pumps were speeded across the Pacific and immediately installed. This resulted in one of America's great salvage jobs, erasing much of the sting of the Pearl Harbor attack.

Dow Chemical Opens New Eastern Offices

In order to adequately serve the increased number of Dow products customers, the Dow Chemical Co., Midland, Mich., announces the appointment of an eastern sales manager and plans to open new offices in Boston and Philadelphia.

Mr. Clayton S. Shoemaker will hold the position of eastern sales manager and Frederick A. Koch will be his assistant. Mr. Shoemaker has been associated with Dow for a number of years and has occupied various sales executive positions with the company.

Clayton S. Shoemaker

The eastern sales office will not supplant the work of Ralph E. Dorland, manager of the New York office. Mr. Dorland, widely known in the chemical field, not wanting to take over the heavy responsibility of opening additional offices, requested that an eastern sales manager be appointed.

Mr. Shoemaker announced the appointment of Alexander Leith, Jr., as manager of the Philadelphia office, and Alfred A. Lawrence as manager of the Boston office. Both Mr. Shoemaker and Mr. Koch will make their headquarters at 30 Rockefeller Plaza, New York City.

A Quiz on LEAKS

How much water is wasted by a leak

1. the size of a pinhead?
2. the size of a match?
3. the size of a lead pencil?

Answers below * * *

You can quickly detect and STOP that leak if you have a—

GLOBE GEOPHONE LEAK DETECTOR

(the dependable ear for accurately and quickly locating underground leaks in water, sewer and steam pipes.)

***1. About 65,000 gallons in a year.
2. Nearly 400,000 gallons in a year.
3. Approximately 1,500,000 gals. yearly.

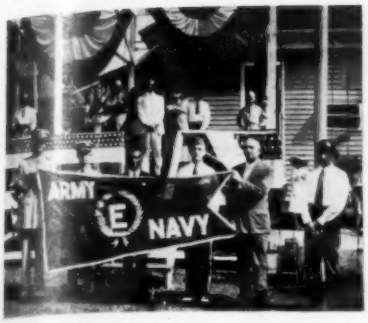
Write for circular

GLOBE PHONE MFG. CORP.

Department "H" Reading, Mass.

Save Water . . . Save Steam

DIRE EMERGENCIES
No. 1—BIG FIRES:
Fires can be reduced in both number and extent by making sure that each local water distribution system is functioning at its maximum capacity. If any part of any water main is clogged, the condition can be quickly and economically remedied by *cleaning*—by THE NATIONAL METHOD. And remember this: *the cleaning requires no purchases of materials needed for the war effort.*
No. 2—BOMBINGS:
Bombs *may* come.—Who knows? Suppose bombs *do* fall—fires break out, hydrants and mains become broken—think of the resulting overload on the undamaged pipe lines! *No* part of any water distribution line, in these times, should be allowed to remain partially clogged—particularly since the remedy (*cleaning* by THE NATIONAL METHOD) is so simple and easy, speedy and economical.
No. 3—POPULATION SHIFTS:
Population influxes into many cities and into nearby training camps are bringing many water departments the heavy responsibility of providing sufficient water service for thousands of new users. Before making purchases of any new pipe or pumps (containing material essential to the successful prosecution of the war) try *cleaning* all clogged sections of pipe by THE NATIONAL METHOD, bringing the mains back to their original carrying capacity. You'll be agreeably surprised!
This is the 37th year of NATIONAL'S service to the water works field. Our records show hundreds of water works that have saved money through this service. For further information, write:
Acme Photo
THE NATIONAL WATER MAIN CLEANING COMPANY
30 Church Street
New York, N. Y.
BRANCHES:
115 Peterboro St., Boston, Mass.
910 William-Oliver Bldg., Atlanta, Ga.
7103 Dale Ave., St. Louis, Mo.
3812 Castellar St., Omaha, Neb.
406 Fla. Theatre Bldg., Jacksonville, Fla.
205 W. Wacker Dr., Chicago, Ill.
501 Howard St., San Francisco, Calif.
2028 Union Ave., Montreal, Can.



J. S. Bridges, resident manager for the North Birmingham works, holds one end of the "E" burgee with the other end held by high-ranking Army and Navy officers. Two plant employees, standing back of the pennant, were awarded the first of the employee pins.

"E" to U. S. Pipe Alabama Plant

On July 20, the Army-Navy "E" was awarded to the men and women of the North Birmingham, Ala., works of the U. S. Pipe and Foundry Co. for high achievement in producing material for the Army and the Navy.

This company has furnished large quantites of cast iron pressure pipe, fittings, and special castings for water, gas, and sewerage service for camps, air bases, naval stations, ordnance works, and war industries. In addition, the company is making certain ordnance materials, marine and machine tool castings.

One-Man Rock Spreader

Shortage of manpower should not prevent the spreading of sand, calcium chloride, gravel, or other maintenance materials on city streets if the new Flink one-man spreader is used. This is manufactured by The Flink Co., Streator, Ill.

With this unit the driver of the truck operates the spreader from the cab, with no extra help being required. Extremely simple and rugged, the equipment is able to spread either wet or dry materials evenly, with the truck operating either forward or backward.

Group Replacement Street Lighting

In studying how to reduce maintenance costs in modern street lighting systems, engineers and officials realize that the lamp represents a substantial portion of the cost.

With this in mind, Slater Electric & Mfg. Co., Brooklyn, N. Y., has designed the Slater group replacement type street lamp that, according to the manufacturers, will render efficient illumination economically and give a much greater light than the average lamp. This lamp, the company asserts in its new Slater Incandescent Street Lighting Lamps catalog, has been designed by specialists in the street lighting field and is quality produced by an organization noted for its engineering facilities.

The company further urges that, when making plans to meet your post-war street lighting problems, you contact its engineers, who will help solve these problems without obligation.

Foster Appointed Pittsburgh Sales Head

Donald D. Foster has been appointed assistant sales manager for the Pittsburgh Equitable Meter Co., Pittsburgh, Pa., according to an announcement by Major A. E. Higgins, vice-president. Mr. Foster will serve as acting head of the sales department while Major Higgins remains on active duty with the Army Air Corps.

D. D. Foster

Mr. Foster formerly was district manager for the Pittsburgh territory. In his new capacity he will be acting head of the sales divisions for both the parent concern and its subsidiary, the Merco Nordstrom Valve Co.

O K CHAMPION

SEWER CLEANERS

PROMPT DELIVERY—While the manufacture of material for the Armed Forces has slowed deliveries of our Power Model Sewer Cleaners, we build two sizes of hand-operated OK Champions that are ready for immediate shipment.

LOW COST—The OK Champion Junior and Standard Sewer Cleaners are nominally priced. The smallest towns and villages are now keeping their sewerage systems in 100% operating capacity with OK Champions.

Ask for Literature

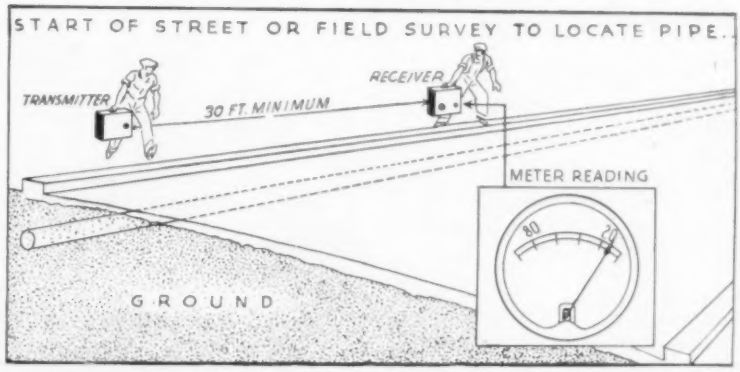
Champion Corporation

1711 Sheffield Ave. Hammond, Ind.

M-SCOPE

BURIED PIPE AND CABLE FINDER

How to Find a Buried Pipe Line:



If a metal object lies between the transmitter and the receiver unit, the sound heard in the earphone will be louder and the meter reading higher.

** Watch for other uses in this series of AMERICAN CITY advertisements.*

FISHER RESEARCH LABORATORY

Direct Teletype by Postal Telegraph PALO ALTO, CALIF.

Short circuit on America's busiest assembly line

A SHUDDERING JOLT, a careening lurch i darkness, and a truck laden with vita supplies crashes into the ditch . . .

Instantly, an important link system—the nation's busiest out like a blown fuse, all break in the pa trap. This mes

. . . and all because of road failure!

The Barrett advertisement above, clipped from The Saturday Evening Post, emphasizes the vital importance of maintenance and repair to keep America's war-time highway system in first-class fighting trim.

It points out that despite gasoline rationing, America's roads are actually wearing out faster today than in peacetime. Right now, with truck traffic up more than 40 per cent—with 4,500,000 trucks transporting raw materials and finished goods—this country's highways are doing extra duty day and night.

That is why road officials and engineers are making *maintenance* the keystone of their current programs. Worn roads can cut down production schedules, waste vital man-hours, menace national safety and cause costly damage to automobiles and tires.

Why not discuss your maintenance problems with the Tarvia field man? There's a right type of Tarvia for the repair and maintenance of almost every type of road.

*Trade-mark Reg. U. S. Pat. Off.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK

New York · Chicago · Birmingham · St. Louis · Detroit · Philadelphia · Boston · Providence
Rochester · Minneapolis · Cleveland · Columbus · Toledo · Youngstown
Syracuse · Buffalo · Cincinnati · Bethlehem · Portland, Me. · Bangor, Me.
Norwood, N. Y. · Cromwell, Conn. · Norwich, Conn. · Savannah, Ga. · Norfolk, Va.
In Canada: THE BARRETT CO., LTD. · Montreal · Toronto · Winnipeg · Vancouver

Barrett Tarvia*

Ad Man Becomes Mayor of Canton, Ohio

Albert S. Fromm, advertising manager of The Union Metal Mfg. Co., Canton, Ohio, became mayor of that great manufacturing city on Monday, August 2, following the death of Mayor Ed. S. Folk.

Albert Fromm, advertising man and Mayor

Mr. Fromm has been identified with Union Metal since 1920. He organized the company's sales promotion and advertising departments in 1925 and has been head of those departments ever since, except for an interval of six years when he acted as assistant sales manager.

About 15 years ago Mr. Fromm became interested in politics as a hobby. Since that time he has served continuously on the Canton City Council, first as councilman, and, from 1939, as President of the council—fulfilling the duties of his public office after business hours.

Eastern Distributors of Rusta Restor

The Gregg Co., 1418 Walnut Street, Philadelphia 2, Pa., continue to be distributors for Rusta Restor cathodic protection in eastern Pennsylvania, New York, New England, New Jersey, and Delaware. This accompanies the recent change whereby the Johnston and Jennings Co., 877 Addison Road, Cleveland 14, Ohio, has taken over the manufacturing of all Rusta Restor equipment.

The company states that Rusta Restor equipment, including the electrodeless type of element anodes, is available not only for steel water tanks but also for many other types of special applications.

P. S. Wilson is managing the Rusta Restor department of the Gregg Co. in Philadelphia.

Gamewell Names Officers, Revises Stock

At the annual meeting of the stockholders of The Gamewell Co., Newton Upper Falls, Mass., held on August 17, 1943, a reduction in the capital stock was authorized by the retirement of the entire issue of preferred stock. A board of eleven directors was elected for the ensuing year and Mr. William C. Beck was re-elected treasurer and clerk. The directors are as follows: Benedict J. Baker, chairman; William J. Carroll; Eben H. Ellison, Jr.; William P. Ellison; William C. Hotchkin; Dwight G. W. Hollister; Charles J. McCullough; Frederick B. Philbrick; Leonard Spangenberg; Winslow L. Webber, and George L. White.

At the organization meetings of the new boards of directors of The Gamewell Company and its subsidiaries, following the annual stockholders' meeting, Mr. Benedict J. Baker was re-elected chairman of the board of directors of Gamewell and each of its subsidaries—The Rockwood Sprinkler Co., Worcester, Mass.; and the Eagle Signal Corp., Moline, Ill.—in charge of all operations of the companies. The officers elected for the companies comprising the Gamewell group are as follows:

The Gamewell Co.: Frederick B. Philbrick, president and general manager; Roger W. Babson, Warren J. Miller and William C. Beck, vice-presidents; John W. McAnarney, secretary to the board; and Warren J. Miller and Russell T. Smith, assistant treasurers.

Rockwood Sprinkler Co., of Mass.: William J. Carroll, president and general manager; H. Clayton Kendall, vice-president; John W. McAnarney, clerk and secretary to the board; Paul S. Smith, treasurer; and William C. Beck, assistant treasurer.

Eagle Signal Corp.: Matthew Porosky, president and general manager; John W. McAnarney, vice-president, also clerk and secretary to the board; William C. Beck, treasurer; and William M. Driggs, Jr., assistant treasurer.

The products of The Gamwell Company and its subsidaries include municipal and industrial fire alarm, police, and other emergency signaling systems, automatic sprinkler systems and traffic control systems.

Jeffrey

FOR A COMPLETE LINE OF SEWAGE AND WATER-TREATMENT EQUIPMENT . .

Bar screens (mechanically-cleaned)
Chemical feeders (electric vibrating)
Floctrols (controlled flocculation)
Grit washers
Grit collectors
Primary and secondary sludge collectors
Sludge elevators
Screenings grinders
Scum removers
(All Patented)

Jeffrey engineers have had years of experience—have made many installations—can offer technical data on both equipment and plant design. Write

The Jeffrey Mfg. Co.

970-99 NORTH FOURTH STREET
COLUMBUS, OHIO

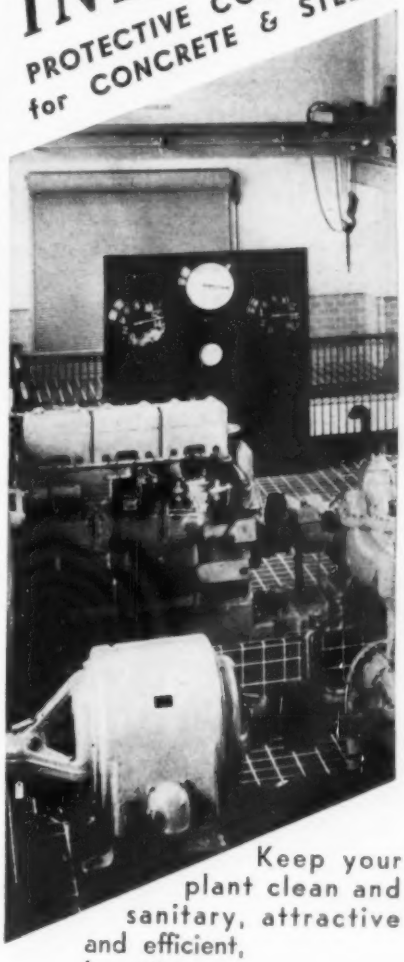
Baltimore, Birmingham, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Harlan, Houston, Huntington, Milwaukee, New York, Philadelphia, Pittsburgh, St. Louis, Salt Lake City, Scranton

PROTECT

Your Expensive Water Plant and Equipment with

INERTOL

PROTECTIVE COATINGS for CONCRETE & STEEL



Keep your plant clean and sanitary, attractive and efficient, by using——

Inertol — Waterproofing Compounds— Paints & Enamels

Use them on exterior and interior surfaces, reservoirs, dams, standpipes and tanks; pipes, pumps and valves; filter basins, clarifiers, etc. Every problem of coating concrete and steel is solved by INERTOL Products . . . proved to be fully resistant to immersion or saturated atmosphere.

Write for specifications:

INERTOL Company, Inc.
470 Frelinghuysen Ave. Newark 5, N. J.
Western Branch: 64 South Park, San Francisco 7, Calif.

To Minimize Mechanical Interruptions in the Office . . .

A phone call brings a Burroughs service man when you need him, but it's far wiser to arrange with Burroughs for periodic inspection, lubrication and adjustment of your Burroughs machines, so that emergencies, and the delays they entail, may be prevented. The standard Burroughs Service Agreement affords this efficient protection by providing:

1. Systematic inspection, lubrication and adjustment of your Burroughs machines at regular intervals.
2. Emergency service as needed.
3. Genuine Burroughs parts installed as needed.
4. Service by expert service men, trained, supervised, paid by Burroughs.
5. All work guaranteed by Burroughs.

Inquire at your local Burroughs office how you can obtain Burroughs service at a low, predetermined cost, or write—

BURROUGHS ADDING MACHINE COMPANY, DETROIT 32, MICHIGAN

MANUFACTURING FOR WAR

Manufacture of aircraft equipment for the Army Air Forces, and the manufacture of Burroughs figuring and accounting equipment for the Army, Navy, U. S. Government and the nation's many war activities, are the vitally important tasks assigned to Burroughs in the Victory Program.

Burroughs

Figuring, Accounting and Statistical Machines ★ Nationwide Maintenance Service
Carbon Paper, Roll Paper, Ribbons and Other Office Machine Supplies

Two Important Events for Indian Motocycle

Harry Patton has recently been appointed to direct the national sales activities of the Indian Motocycle Co., Springfield, Mass.

Harry Patton

Mr. Patton, formerly district sales manager for metropolitan New York, New Jersey, and Pennsylvania, is no newcomer to the motorcycle industry and is well known to evryone along the Atlantic seaboard for his very active support of events such as the Langhorne and Daytona Nationals and others more local in scope.

On August 17, the employees and management of this company were presented with the Army-Navy "E" award for outstanding production of war material. The ceremony was very colorful and was attended by leading city and industrial leaders, as well as representatives of the various services.

Worthington Pump Buys Ransome Company

Worthington Pump and Machinery Corp., Harrison, N. J., recently acquired the Ransome Machinery Co., Dunellen, N. J., as a wholly owned subsidiary.

Ransome, makers of concrete mixers and road paving equipment, will augment the present Worthington line of portable compressors and contractors' air tools and thereby round out Worthington's offering to the construction equipment field, company officials state.

Thread Tool Grinding Fixture

A new handy thread-tool grinding device for grinding both 60° and 29° threading tool bits with extreme precision is being produced by Robert H. Clark Co., 3424 Sunset Blvd., Los Angeles, 26, Calif., manufacturers of Clark Cutting Tools.

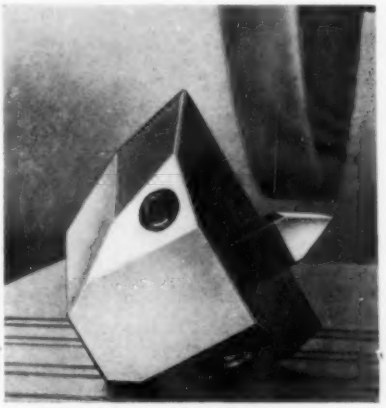
The manufacturer states that the new fixture has no graduated scales or moving parts. The machinist merely slides the bit into the holder, tightens a setscrew and places the fixture on the grinder work table, properly positioned for the thread angle desired.

Experienced machinists and tool grinders will find that this fixture saves time and eliminates waste caused by grinding inaccuracies, according to the manufacturer; and even inexperienced shop help can do a quick, accurate, and finished job of thread tool bit grinding when using it.

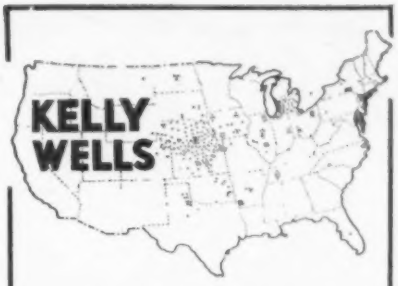
The design of the fixture makes it especially adaptable for use with a magnetic chuck, although if desired it can easily be clamped to the work table. The special tool bit holders will securely hold round or square tool bits of all sizes from 1/8" to 5/8" for cutting both right and left hand threads.

Correct side clearance is provided for, and all bits may be ground with or without rake on the cutting face. The fixture may be used on any surface grinder or cutter grinder and is made of high permeability steel for maximum holding value and long life.

The new fixture is available in two standard sizes.



This device makes it easy to grind small pieces at any required angle.



ALL OVER THE MAP!

For 25 years Kelly concrete cased wells have stood the test of time. We have several thousand now in service, covering a territory of 33 states and parts of Canada.

Kelly concrete cased wells are especially adapted for developing large water supplies from sand and gravel formations.

We Guarantee our wells to develop all available water, sand free, to their full capacity.

KELLY WELL CO., INC.
Grand Island, Neb.

MB
ALL-PURPOSE MARKER
for Municipalities!
The M-B MARKER is proving indispensable to cities and towns all over the country. While primarily intended as a fast, efficient unit for marking center lines of streets, it can also be used for striping parking lanes, crosswalks, safety zones, playgrounds, airports, football fields, tennis courts, etc. In addition, the machine serves as a handy paint sprayer for painting curbs, traffic signs, park benches, poles, guard rails, bridge abutments, fences, etc.
WRITE FOR LITERATURE.
MEILI-BLUMBERG CORP.
Box A-9
NEW HOLSTEIN, WISCONSIN
TWO TYPES
Hand propelled model (shown here) and self propelled type that lays down traffic lines up to 15,000 feet per hour. Easy, one-man control. Practically no upkeep.
STREET MARKER
A3294-1/3R

Getting Postwar Plans Down in Black and White

One day, and who knows how soon, man power shortage will be a forgotten phrase, and priorities will once again be only a word in the dictionary.

Forward-minded cities are planning ahead to that day. Planning now, for postwar improvements in practically every department of city life.

This planning takes paper work. It takes letters, surveys, bulletins, specifications, reports . . . a long line of written communication.

In solving these paper work problems the departments of city government have looked again to their Mimeograph duplicator. They know from long experience that the versatile Mimeograph duplicator is the quick answer to any paper work problem, from the simplest bulletins to the most complicated sheet of specifications.

And when you've "told" your plans to the Mimeograph duplicator, you've set them down in black and white, clear, crisp and permanent.

Is your department making the full use of its Mimeograph equipment? For many practical suggestions call your Mimeograph distributor, or write direct: A. B. Dick Company, Chicago.

Available without a priority rating — teammate to the Mimeograph duplicator . . . the Mimeograph photochemical printer. It provides a new method of making duplicate copies of ink tracing, in quantity at very low cost. Find out now how it can help fill the specialized needs of your department. Just mail coupon at right.

Mimeograph duplicator

MIMEOGRAPH is the trade-mark of A. B. Dick Company, Chicago, registered in the U. S. Patent Office.

A. B. Dick Company, Department N-943
720 West Jackson Boulevard, Chicago 6, Illinois

Please send me full information on the Mimeograph photochemical printer.

NAME.....DEPT.....

ADDRESS.....

CITY.....STATE.....

Hon. Dwight H. Green, Governor of Illinois, making the Army-Navy "E" dedication address at The Baker Mfg. Co. ceremonies.

Army-Navy "E" for Baker Mfg. Co.

In brief ceremonies held at their plant, employees and management of The Baker Mfg. Co., Springfield, Ill., received the Army-Navy "E" award for outstanding achievement in the production of war material.

The Hon. Dwight H. Green, Governor of Illinois, made the welcoming address. The burgee was presented by Col. W. H. Hasting, USA, Chief of Production, Branch Office of Division Engineer, Great Lakes, Ill., to W. C. Staley, president of the Baker company. Lt. Comm. H. B. Freeman, USNR, Resident Inspector of Naval Materials, St. Louis, Mo., presented the employee's "E" pins to employee representatives.

Many high ranking army and navy officers, industrial leaders, and employees were in attendance.

Farris Establishes Valve Repair Division

Municipal engineers and superintendents of water works, sewage-treatment plants, and municipal power plants, all of whom realize the need for prompt maintenance and repair of worn valves, will be interested in the announcement of the Farris Engineering Co., Ridgefield, N. J., that this organization has established a new division to handle valve repairs.

The company states that this new division will be manned by skilled mechanics engaged in the actual manufacture of valves, and fully equipped to speedily recondition and reconstruct all types of reducing, relief, and standard or special valves, and control apparatus.

New Asbestos-Cement Pressure Pipe

A new pressure pipe, called "Eternit" A/C, has recently been introduced by The Ruberoid Co., 500 Fifth Ave., New York, N. Y., for use in water works, drainage, and irrigation systems.

The company states that this new pipe insures easier and more economical installation—smooth walls which reduce friction to a minimum, and assure high carrying capacity and the elimination of electrolysis and tuberculation.

A controlled mixture of asbestos fibre and portland cement, both non-critical material, prevents the pipe from being affected by rust. Because it is a non-conductor of electricity, it may be laid adjacent to electric light and power lines without danger of galvanic corrosion, regardless of the type of soil and extent of moisture present.

The manufacturers assert that a patented extrusion process provides density and strength, and insures uniform measurements and extremely smooth surfaces both inside and out, without machining. This makes it possible to cut the pipe in the field and to couple it without machine preparation, which is an economy in time and labor.

The new Eternit asbestos cement pipe being cut with hack saw. It can be coupled immediately without machine preparation.

NON-CLOGGING
FOR SEWAGE SERVICE

The impellers of these Morris non-clogging Sewage Pumps have such "thoroughfare" passageways that, for example, an 8-inch wooden ball will pass completely through a 10-inch pump of this type. These pumps are built both horizontal and vertical, and for operation by standard-speed motors.

Bulletin on request

Morris Machine Works
Baldwinsville New York

MORRIS
CENTRIFUGAL PUMPS
for municipal services

ARMY TWILL by REEVES
REG. U.S. PAT. OFF. SANFORIZED*
MADE TO GOVERNMENT SPECIFICATIONS

REEVES Glengarrie POPLIN

For Better Uniforms Demand These Labels!

REEVES ARMY TWILL SCORES A HIT!

Men who safeguard our City require uniforms whose official appearance inspires public confidence. They must also withstand the strain of active duty. That's why Reeves Army Twill wins their praise. Specify this famous fabric in *your* uniforms.

Reeves Army Twill passes U. S. Govt. tests for strength, endurance and color-fastness. For fabric vitality it's a leader!

For matching shirts, GLENGARRIE POPLIN is equally popular. Both fabrics available in favorite colors—are Sanforized* against shrinking.

*Fabric shrinkage not more than 1%. (U. S. Government Test CCC-T-191-a).

See your nearest dealer for uniforms, sport and work clothes made from these famous fabrics, or write for leaflet to:

OVER 6050 million yards of Reeves Army Twill sold to the U. S. Army

REEVES BROTHERS, INC.
54 WORTH STREET NEW YORK CITY

Columbus, Ohio, Rides to a New

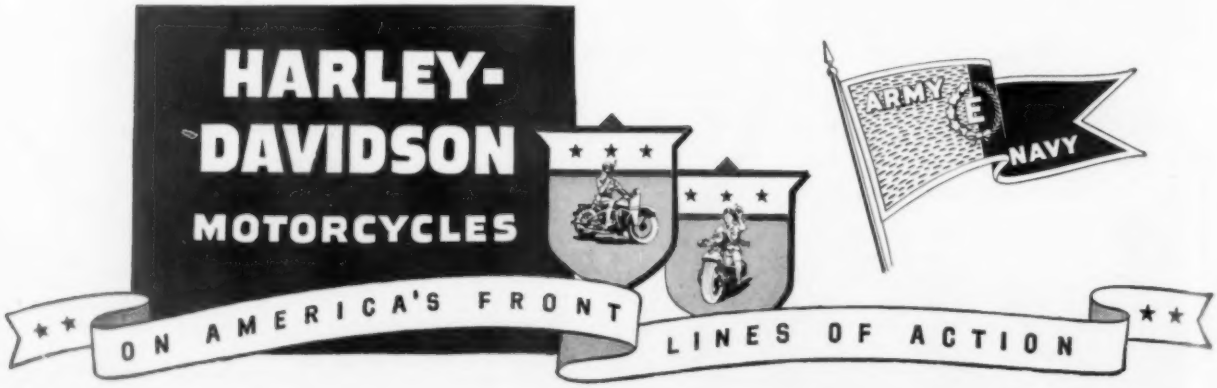
SAFETY RECORD

on HARLEY-DAVIDSONS

THE motorcycle police of Columbus, Ohio, and their fleet of 36 Harley-Davidson Motorcycles and Servi-Cars helped their city win First Place in the 250,000-500,000 population group in the 1942 Traffic Safety Contest conducted by the National Safety Council. Despite great war activities in the Columbus area, traffic deaths were reduced from 59 in 1941 to 34 in 1942.

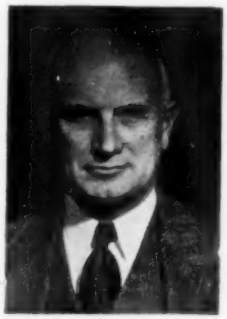
For many years Columbus has been an exclusive user of Harley-Davidson Police Motorcycles. One more outstanding example of the dependable performance these motorcycles are providing for more than 3600 American urban and rural communities. See your Harley-Davidson Dealer today about your motorcycle allotment under the new W.P.B. release.

HARLEY-DAVIDSON MOTOR CO., Milwaukee 1, Wisconsin



New Chemical Company Organized

July 1 marks the date of incorporation for the Tulsa Chemical Co., with headquarters at Tulsa, Oklahoma. This company was organized for the manufacture of anhydrous hydrofluoric acid, a catalyst used in the production of high octane gasoline. Interest in the company is divided among the Pennsylvania Salt Mfg. Co., Philadelphia, the Mahoning Mining Co., Rosiclare, Ill., and the Ozark Chemical Co., Tulsa.



George B. Beitzel

George B. Beitzel, vice-president of the Pennsylvania Salt Mfg. Co., is president of the new company. C. O. Anderson, assistant to the president, Ozark Chemical Co., is vice-president.

Officials state than an anhydrous hydrofluoric acid plant is being erected at Tulsa, Okla., and production should begin during October.

Preserving Municipal Records

If the preservation of vital municipal records and historical documents is important—and every municipal official agrees that it is—and if it would be helpful to have these records stored in a small, handy, fireproof and tamperproof space rather than in large, awkward and bulky files, the service of the Microstat Corp., 18 W. 48th St., New York should offer a solution.

This firm does not offer expensive cameras for sale to perform this microfilming work. It, instead, will do the work with its own cameras, placing the full responsibility for excellent production on itself rather than on the shoulders of the municipality and its employees.

The company manufacturers its own J-7 camera, which is controlled electrically throughout, and is regarded as one of the finest in the field today. Microstat laboratories have evolved their own developers also, which are used exclusively in the process.

The element of space-saving may be emphasized by the fact that one large company recently saved valuable storage and office space by the microfilming of 50,000,000 pieces of paper, reducing each to the small size represented by the microfilm. The savings in space amounted to approximately 99 per cent.

For CIVILIAN DEFENSE

VALVES
HYDRANTS

Experience indicates that more damage is done in an enemy air raid by incendiary bombs than by demolition bombs. City officials and water-works operators are striving for maximum fire protection by increased installation of fire hydrants and valves. Adequate valve installation may also prevent stopping operation of war material factories in case a water main is broken by a bomb.

M & H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

PITTSBURGH • DES MOINES

Elevated
STEEL TANKS

From the first P-DM Elevated Steel Tank (built over 40 years ago and serving well today), to the advanced structures of the present, runs a continuity of *experience* gained in the municipal field which is always at your service. Let a P-DM Engineer consult with you—without obligation.

PITTSBURGH • DES MOINES
STEEL COMPANY
Pittsburgh, Pa. . . 3412 Neville Island
Des Moines, Ia. . . 913 Tuttle Street

★ ★

TODAY BETTER BROOM FIBRES ARE A "MUST"...

AFRICAN BASS FIBRES

INDIA PALMYRAH STALKS

The longer mileage you obtain in broom fibres means less time-taking refilling of the broom core and valuable man-hours put to an extra use. Fresh, high-quality fibres in your mechanical sweeper are sound and wisely important economy in these times.

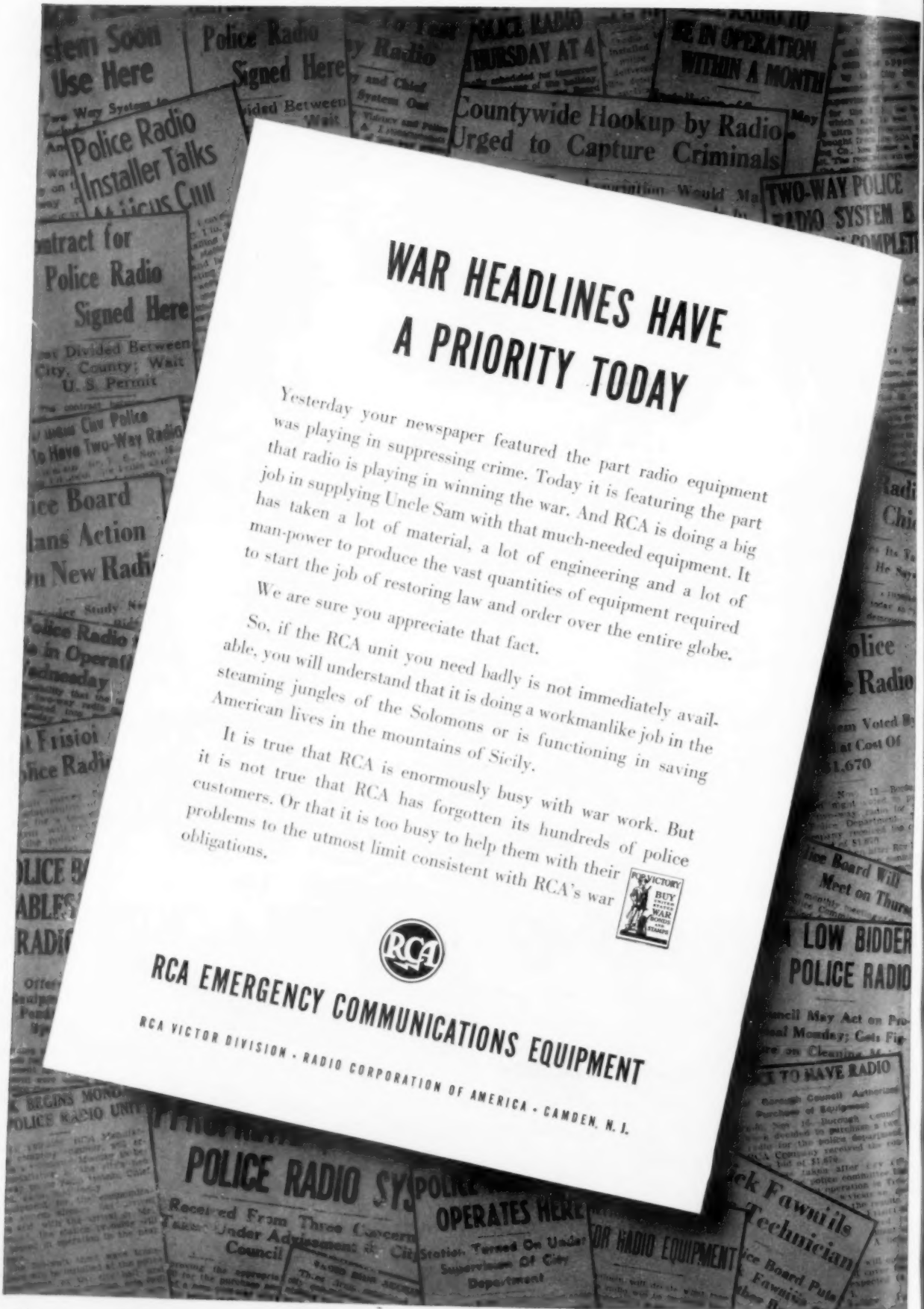
We are able to service every need in all types and sizes. We would be happy to receive your request for samples and quotations.

MOUNTAIN HICKORY SPLINTS

STEEL WIRE

The OTTO GERDAU CO.

533 Canal St., New York, N. Y.


Police Radio Signed Here
Police Radio Installer Talks
Countywide Hookup by Radio Urged to Capture Criminals
TWO-WAY POLICE RADIO SYSTEM
Contract for Police Radio Signed Here
POLICE RADIO SYS
OPERATES HERE
POLICE RADIO EQUIPMENT
WAR HEADLINES HAVE A PRIORITY TODAY
Yesterday your newspaper featured the part radio equipment was playing in suppressing crime. Today it is featuring the part that radio is playing in winning the war. And RCA is doing a big job in supplying Uncle Sam with that much-needed equipment. It has taken a lot of material, a lot of engineering and a lot of man-power to produce the vast quantities of equipment required to start the job of restoring law and order over the entire globe.
We are sure you appreciate that fact.
So, if the RCA unit you need badly is not immediately available, you will understand that it is doing a workmanlike job in the steaming jungles of the Solomons or is functioning in saving American lives in the mountains of Sicily.
It is true that RCA is enormously busy with war work. But it is not true that RCA has forgotten its hundreds of police customers. Or that it is too busy to help them with their problems to the utmost limit consistent with RCA's war obligations.
BUY WAR BONDS AND STAMPS
RCA EMERGENCY COMMUNICATIONS EQUIPMENT
RCA VICTOR DIVISION - RADIO CORPORATION OF AMERICA - CAMDEN, N. J.

Jack Kreitz, shop committee chairman, and McClure Kelley, president of the company are flanked by Army officials during the presentation of the "E" burgee to Austin-Western.

Austin-Western's Army-Navy "E"

The Army-Navy "E" burgee now flys over the plant of the Austin-Western Road Machinery Co., Aurora, Ill., and its employees wear the coveted "E" pin. Military officials reveal that this company has performed a conspicuous job in producing various pieces of equipment, some of which had never been built before, for making parts so accurately that they can be interchanged with units in the field and those made by other companies, and for rehabilitating old equipment, some dating back to World War I, and making it work better than ever.

Among the most interesting of the many pieces of equipment is the 155 mm howitzer carriage. This forms a part of a heavy piece of artillery credited with a major role in the conquest of Tunisia. The unit weighs approximately 4½ tons, can be drawn by truck at 50 mph, and can fire a 95-lb. shell at a range exceeding 12,000 yards.

Gar Wood Personnel Changes

Four Gar Wood engineers have recently been promoted, according to an announcement by L. S. Wood, vice-president in charge of engineering, Gar Wood Industries, Inc., Detroit, Mich.

George D. Shaeffer

George Schaeffer now holds the position of chief engineer of the engineering departments. Mr. Schaeffer formerly was chief engineer of the road machinery division.

A. C. Evans was promoted to chief engineer of the road machinery division. I. C. Moreau was assigned the duties of chief engineer of the hoist and body division. J. E. Monahan was placed in charge of all hydraulic engineering.

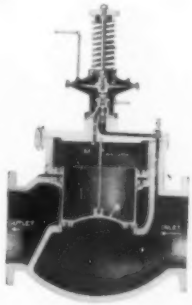
GOLDEN-ANDERSON
MAINTENANCE FREE VALVES

A type and size for every water works service . . .

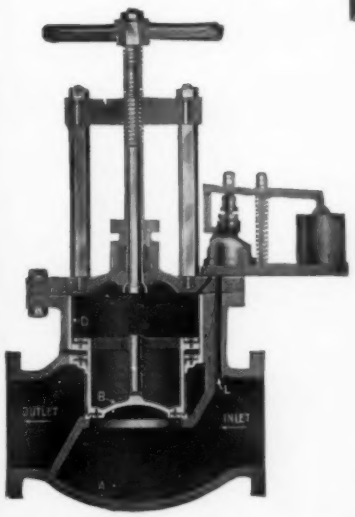
● Guard your water supply systems against delays and replacements. Specify GOLDEN-ANDERSON Valves for every service . . . their inherent features of better design and construction insure efficient operation under every condition. The exceptionally wide range includes Water Pressure Reducing Valves, Water Control Valves, Single and Double Acting Altitude Valves, Electric and Manual Water Service Valves.

Write today for informative catalogs . . . tell us your particular problem. We can furnish a G-A Specialty Valve to meet your specific requirements.

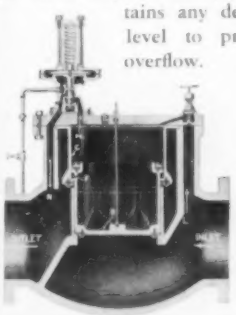
Stop Check Single Acting Altitude Valve automatically maintains a uniform water level within 3" to 12" variation to prevent any tank overflow. Prevents loss or return of storage water back through the valve.



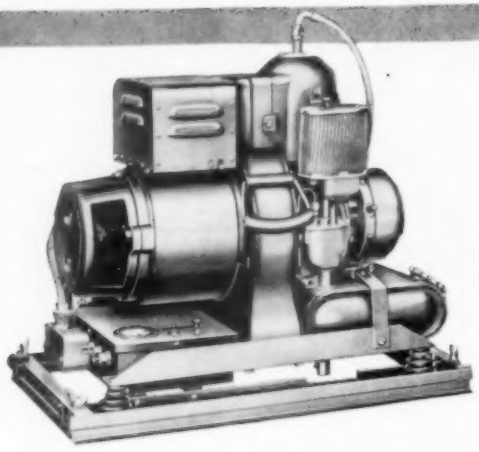
Solenoid Water Service Valve for simultaneously cutting in booster pump suction supply whenever pumps are started.



Single Acting, Semi-Throttling Altitude Valve installed in upstream line to tanks, standpipes or reservoirs, sensitively maintains any desired level to prevent overflow.



GOLDEN-ANDERSON
VALVE SPECIALTY COMPANY
1329 FULTON BLDG. PITTSBURGH, PA.



HOW YOU CAN GET

NEW!

HOMELITE

PORTABLE GENERATORS

Sooner than you think!

This war doesn't have to last forever. We can shorten it considerably. We can get it over quickly . . . if we do all that is expected of us. This means investments . . . heavy investments . . .in War Bonds. For the more money we can turn into equipment for Victory, the sooner we can get back to the delivery of equipment you need for your work . . . Homelite Portable Generators, for example, better than ever before.

★ ★ ★

ARMY E NAVY

Every Homelite worker is buying War Bonds regularly And every Homelite worker is doing everything possible to speed Victory through ever-increasing production.

HOMELITE CORPORATION

PORT CHESTER, NEW YORK

ANOTHER ENEMY TO BE OVERCOME

The insidious enemy of Pollution, threatening our national health and comfort.

As soon as the war is over, this other enemy will be attacked with Government aid, and driven forever from our streams, harbors and shore lines.

Is your city or community already wisely making its plans? 24-page Bulletin 287 should be helpful to your engineers. A postcard will bring it.

Sincerely Yours,

BUILDERS - PROVIDENCE

(Division of Builders Iron Foundry)

Providence, R. I.

HYDRO-TITE

HYDRO-TITE — The self-caulking joint compound that makes cast iron water pipe joints — strong — tight — flexible and everlasting. Used on thousands of miles of pipe with a record of more than 30 years without a failure.

•

FIBREX — The sanitary paper packing that is used like braided jute. Free from bacteria — treated with a water repellent —put up in 60 pound reels. 70 pounds of Fibrex takes the place of 100 pounds of braided jute.

•

HYDRAULIC DEVELOPMENT CORPORATION
50 Church St.
New York, N. Y.

DRY BRAIDED

Fibrex

Ruhf New President Mack Trucks, Inc.

C. T. Ruhf is the new president of Mack Trucks, Inc., Empire State Bldg., according to an announcement by Louis G. Bissel, chairman of the board of directors. Mr. Ruhf has been with Mack since 1912.

C. T. Ruhf

Mr. Ruhf has been executive vice-president since last January, following the death of E. C. Fink former president and board chairman. Prior to that time he was operating vice-president in charge of factories.

Low Steel Content Storage Tanks

Municipal officials interested in tanks used to store water and oil, or to digest sewage sludge, designed particularly to hold steel content down to a minimum, will find the set of figures recently released by the Preload Co., 420 Lexington Ave., New York 17, N. Y., enlightening. On five separate tanks ranging in size from 25,000 to 100,000 bbls. in capacity, designs incorporating the prestressed reinforcing methods of the Preload Company saved from 70 to 75 per cent steel where reinforcing rods were used, and from 82 to 90 per cent in the case of high tensile prestressed wire—over the amount used in a steel plate tank of similar size.

Detailed comparisons are as follows:

	Pounds of Steel Used per bbl. Capacity		
		Preload	
Capacity (bbls.)	Steel Plate	Rods	Wire
100,000	8.50	2.67	0.95
55,000	7.48	2.50	0.89
37,500	8.00	2.85	0.96
30,000	7.84	2.43	0.93
25,000	8.09	1.92	0.88

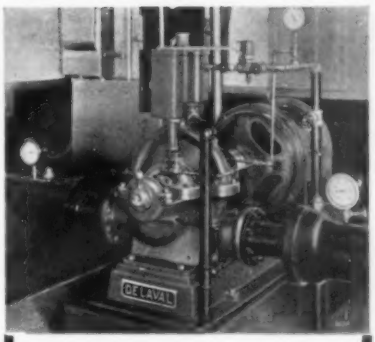
Victory Maintenance for Diesel Plants

To keep essential power-generating plants operating at maximum output, the "Victory Maintenance Plan for Diesel Electric Plants" has been developed through the cooperative effort of the diesel engine manufacturers and the Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa.

As many municipal plants are operating both regular and standby units at full capacity, proper maintenance is now imperative. As a contribution to better and more adequate maintenance programs for diesel engines and generators, Westinghouse consulted engine builders for assistance in the preparation of this information so that a combined plan for the units could be established. Copies of this Victory Maintenance Plan may now be secured from the diesel engine manufacturers.

Prepared as a portfolio, this plan includes an 18-page Operating Guide booklet that covers complete information on the necessary steps for maintenance and inspection programs, Mechanical and Electrical Check Charts based on frequency of inspection, and a sample form of a recommended Diesel Engine Operating Log which, when filled out, will serve to determine the proper scheduling of inspection intervals to meet individual plant requirements.

Westinghouse engineers discuss the Victory Maintenance Plan. Left to right they are L. F. A. Mitchell, manager machinery electrification section, industrial depart.; N. H. Gimmey, application data dept.; E. E. Lacey; machinery electrification section; and K. M. Patterson, application engineer, transportation, and generator division.



Pump fitted with De Laval submerged suction priming system: 1100 g.p.m. against 245 ft. at 1700 r.p.m.

Pump comes right back!

If the three-quarter-inch corporation cock on the suction pipe of the pump illustrated above is opened wide, delivery of water ceases, but is resumed again within one minute after the cock is closed, the pump being at once re-primed by the

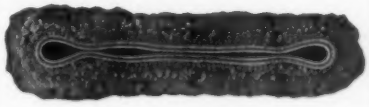
DE LAVAL SUBMERGED SUCTION PRIMING SYSTEM

Were the air inleakage too great for the priming system to handle, the pump would automatically be shut down and could not be started again until the fault had been corrected.

Ask for Publication P-3224.

DE LAVAL STEAM TURBINE CO. TRENTON, N. J.

WHY—



The above illustration shows the position of the rubber lining in

Bi-Lateral Fire Hose

when it is held in a flattened position between calls into service. This is why we can save a city one replacement, because the hose will give double the service of any hose constructed under the old method.

—*Also*—

We can load 25% more on the apparatus-bed, actually making an $8,000 truck loaded with the Bi-Lateral construction, cheaper than one priced at $7,000 when loaded with other construction.

BI-LATERAL FIRE HOSE CO.

20 N. Wacker Drive, Chicago, Illinois

INSTALLATIONS WORLD WIDE

LARGEST CITY TO SMALLEST VILLAGE

VALVES COMPLETE EQUIPMENT FOR WATER WORKS FILTRATION AND SEWAGE DISPOSAL PLANTS LATEST "COREY TYPE" **HYDRANTS**

Write for Catalogue and Information

IOWA VALVE CO.

General Offices:
Hubbell Bldg., Des Moines, Iowa

Plant:
Oskaloosa, Iowa

PROFESSIONAL SERVICE DIRECTORY

ALBRIGHT & FRIEL, INC.
Consulting Engineers
Water, Sewerage, Garbage and Valuation Problems
1520 Locust St.
Philadelphia, Penna.

BARKER & WHEELER
36 State Street — Albany, N. Y.
11 Park Place — New York City
Water Supply, Sewerage, Sewage Disposal — Public Utility and Industrial Valuations and Rates, Power

Burns & McDonnell Engr. Co.
Consulting Engineers Since 1897
Waterworks, Light and Power, Sewerage. Reports, Designs, Appraisals, Rate Investigations
Kansas City, Mo. 107 W. Linwood Blvd.

ROBERT HALL CRAIG
Consulting Engineer
Municipal Problems
Utility Rates—Town Planning—Water and Sewage Systems—Economic Surveys.
HARRISBURG, PENNSYLVANIA

ALVORD, BURDICK & HOWSON
John W. Alvord — Chas. B. Burdick
Donald M. Maxwell — Louis R. Howson
Water Works, Water Purification, Flood Relief, Sewerage — Sewage Disposal, Drainage, Appraisals, Power Generation
CIVIC OPERA BLDG., CHICAGO, ILL.

BLACK & VEATCH
Consulting Engineers
Sewerage, Sewage Disposal, Water Supply, Water Purification, Electric Lighting, Power Plants, Valuations, Special Investigations and Reports.
1706 Broadway, Kansas City, Mo.

JAMES M. CAIRD
Assoc. Am. Soc. C.E.
CHEMIST and BACTERIOLOGIST
OFFICE AND LABORATORY
Cannon Building, Troy, N. Y.
Water Analysis and Tests of Filter Plants

S. R. DE BOER & CO.
Consulting City Planners
Post-war City and Neighborhood Plans—Economic—Social—Recreational
515 E. Iliff Ave. Denver, Colo.

The American Public Utilities Bureau
Organized to assist municipalities and public groups in utility valuations, rates, franchises, accounting and surveys.
John Bauer, Ph.D., Director
280 Broadway — New York City

Clinton L. Bogert
Consulting Engineer
Water Supply and Purification
Sewerage and Sewage Disposal
Timber, Steel and Reinforced Concrete Structures
624 Madison Avenue
New York City

Campbell, Davis & Bankson
The Chester Engineers
Water Supply and Purification, Sewerage and Sewage Treatment, Power Development and Applications, Valuations and Rates.
210 Parkway at Sandusky St., Pittsburgh, Pa.

DeLEUW, CATHER & CO.
Water Supply — Sewerage
Railroads — Highways
Grade Separations — Bridges — Subways—Local Transportation.
Investigations — Reports — Appraisals—Plans and Supervision of Construction.
20 No. Wacker Drive — Chicago

E. T. ARCHER & CO.
Consulting Engineers
Steam and Hydraulic Power Plants, Water Sewerage, Paving, Roads, Appraisals, Testimony, Reports
New England Bldg., Kansas City, Mo. — City Bank Bldg., Shreveport, La.

BUCK, SEIFERT AND JOST
Consulting Engineers
(Formerly Nicholas S. Hill Associates)
Water Supply, Sewage Disposal, Hydraulic Developments
Valuations and Reports.
Chemical and Biological Laboratories.
112 East 19th Street — New York City

WILLIAM R. CONARD
Burlington, N. J.
Inspections and Tests of Materials. Reports, Appraisals, Designs, Specifications.

SAMUEL M. ELLSWORTH
M. Am. Soc. C. E.
Consulting Engineer
Water Supply and Purification, Sewerage and Sewage Treatment, Municipal and Industrial Wastes Disposal
6 Beacon St. — Boston, Mass.

MICHAEL BAKER, JR.
The Baker Engineers
Civil Engineers & Surveyors
Municipal Engineers
Airport and Water Works Design
Sewage Design and Operation
Surveys and Maps of Large Areas
Home Office, Rochester, Pa.

BURGESS & NIPLE
Philip Burgess — Chester A. Niple
T. C. Kussmaul — Earl S. Hoyt
Ben K. Bare — Clayton C. Bull
Waterworks, Purification, Sewerage, Sewage Treatment, Valuations.
568 E. Broad St., Columbus, O.

Consoer, Townsend & Quinlan
Water Supply—Sewerage—Flood Control and Drainage—Bridges—Ornamental Street Lighting—Paving—Light and Power Plants, Appraisals.
211 W. Wacker Drive — Chicago

FAY, SPOFFORD AND THORNDIKE
Consulting Engineers
Port Development — Bridges — Water Supply — Drainage—Sewerage — Fire Prevention
11 Beacon St. — Boston

GANNETT, EASTMAN & FLEMING, INC.
HARRISBURG, PENNA.
ENGINEERS
Preparation of
POST WAR REPORTS AND PLANS

WALTER H. FLOOD & CO.
Chemical Engineers
Paving and Engineering Materials — Inspections — Reports — Specifications—Physical and Chemical Tests—Design and Control of Asphalt and Concrete Mixtures.
822 E. 42nd St. — Chicago, Ill.

METCALF & EDDY
Engineers
Water, Sewage, Drainage, Refuse and Industrial Wastes Problems
Air Fields, Laboratory, Valuations
Statler Building, Boston, Mass.

FORD, BACON & DAVIS, Inc.
Engineers
DESIGN · CONSTRUCTION
VALUATIONS · REPORTS
New York, Chicago, Philadelphia
Galveston — Washington

THE PITOMETER COMPANY
Engineers
Water Waste Surveys — *Trunk Main Surveys* — *Penstock Gaugings* — *Water Distribution Studies*
52 Church Street — New York

WILLIAM A. GOFF
Consulting Engineer
Private and Municipal Engineering
Sewerage, Sewage Disposal
Water Supply and Treatment
Garbage, Refuse, Industrial Wastes
Design, Supervision, Valuations, Reports
Broad St. Station Bldg., Philadelphia

THE J. M. CLEMINSHAW COMPANY
APPRAISALS—REVALUATIONS
Specializing in the revaluation of municipalities for local tax purposes.
Illustrated brochure and moving picture film upon request
CLEVELAND — NEW YORK

J. W. Goodwin Engineering Co.
Municipal & Consulting Engineers
Design and Construction Supervision.
Airports, Waterways, Sewerage, Sewage Treatment, Water Treatment, Gas Systems, Street Improvements, Reports, Appraisals
Birmingham 3, Alabama

ELECTRICAL TESTING LABORATORIES, INC.
Electrical and General Testing—Inspections—Research—Certification
2 EAST END AVENUE AT 79th STREET, NEW YORK, N. Y.
BUtterfield 8-2600

GREELEY & HANSEN
Hydraulic and Sanitary Engineers
Reports, Designs, Supervision, Appraisals, Water Supply, Sewerage, Water Purification, Sewage Treatment, Refuse Disposal.
Chicago, Ill. 6 N. Michigan Ave.

OCTOBER, 1943

PERIODICAL ROOM
GENERAL LIBRARY
UNIV. OF MICH.

The American City

Preparing for Post-War Water and Sewage Works Development

By SAMUEL B. MORRIS

President, American Water Works Association

THE passing of each month draws us one month nearer to Victory in this war. This time there is remarkable unanimity that there should be planning for peace, planning for the post-war world. Business, industry, education, and government are all engaged in study and planning in order that the constructive capacity of our nation at war may be converted to full employment in a productive, enduring peace.

> Business and industry are conscious of the necessity for the most rapid conversion of war plants to the products of peace—products required to fill the pent-up consumer demand. Prompt availability of consumer goods will be one of the best protections against post-war inflation. Their manufacture and distribution will provide many jobs for our home-coming boys.
>
> To avoid a serious lag in employment and prosperity, the conversion to peacetime activities must be rapid. This shows the timeliness and importance of the "Blue-Print Now" slogan of the Committee on Water and Sewage Works Development.

An adequate, safe, and satisfactory water supply, and an equally adequate sanitary disposal of domestic and industrial wastes, are essential to the peacetime productivity of our communities. These utilities are vital necessities. If plans, specifications, and necessary land acquisition are made now, these needed water and sewage works will gain the necessary priority of finance, manpower, materials, and equipment which can contribute at the war's end to the prompt and useful absorption of men from the fronts.